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**MAN AND HIS
WORLD**

Teacher's Edition

People and the Land

CURRICULUM

THE NOBLE AND NOBLE BASAL SOCIAL STUDIES SERIES

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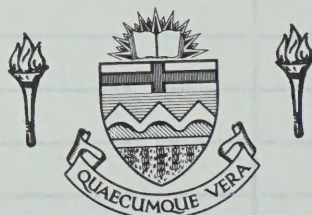
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**MAN AND HIS
WORLD**

People and the Land

TEACHER'S EDITION

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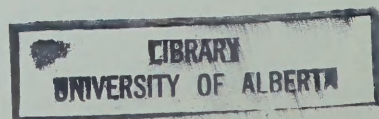
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RATIONALE FOR Man and His World

THE NOBLE AND NOBLE BASAL SOCIAL STUDIES SERIES

**You and Your Family
Groups and Communities
Cities and Suburbs
People and the Land
Many Americans – One Nation
People and Culture**

MAN AND HIS WORLD, the new Noble and Noble Basal Social Studies Series, is a transitional approach to the teaching of the social studies at the elementary level. Its major objective is the practical teaching of major social studies and reading skills.

What Is the Transitional Approach?

For more than a decade, there has been turmoil in the field of social studies. In the early 1960s, dissatisfaction with the teaching of social studies in the schools reached a peak. At that time, many private foundations and governmental agencies provided money to finance new curriculum projects. Such projects attempted to develop improved ways of teaching social studies.

As experts in the various areas of the social studies began to investigate the *methods* of teaching social studies, they examined the *materials* then available for use as teaching tools. Teachers and scholars felt that the traditional narrative textbooks were both too dull and too

limited in coverage. Research showed that children retained very little of the information from widely used traditional texts. Research also indicated that memorizing information about the past is insufficient training for the problems and issues of the present. Teachers and scholars realized that if teaching methods were to be changed, the materials used in our nation's classrooms also required change. New methods of teaching would be meaningless without classroom materials for use on a day-to-day basis.

And so new materials began to appear in classrooms throughout the country for testing purposes. Many of these materials were subsequently published and have had wide distribution in our nation's schools. Most of these materials bore the general labels of *inquiry* or *discovery*.

In varying degrees, these new materials focused on providing learners with data in the form of original source materials. Through directed discussion, pupils were to formulate their own concepts and generalizations about the various disciplines in the social sciences.

Some of the new types of material were well received by both teachers and learners. But now, several years later, we have the benefit of prolonged classroom experience with these new materials and methods. What have we learned from this classroom feedback? Quite a bit. We have found that the most widely used new method—the *inquiry* method—has not been the panacea that so many had hoped for, but that elements of it do work with great success in classroom situations. There has been much criticism, especially at the elementary school level, that a framework of knowledge must be understood by pupils before they can form new generalizations about either historical or contemporary events.

The authors and editors of The Noble and Noble Basal Social Studies Series have carefully studied the reactions of teachers and pupils to both the new methods and materials and the more traditional ones. On the basis of that study, they have chosen the most successful elements of the two to create a **transitional** program—a social studies program which combines the best of both traditional and inquiry-oriented materials.

First, they have recognized that—especially at the elementary school level—there is a definite need to present factual material through a

chronological narrative to help pupils establish a framework to which they can relate both ideas and events.

Second, they have seen that original source materials—a mainstay of the inquiry approach—give a flavor of authenticity and immediacy that captures pupil interest. However, these materials often present reading difficulties because of archaic language, unfamiliar sentence construction, and lengthy sentences.

As a result of these two pieces of classroom feedback, the authors and editors of Noble and Noble have built their program around a combination of lively narrative and judiciously chosen source materials. At the very earliest grade levels, these source materials are, of course, in *visual* form—a large quantity of pictures and simple maps. As the learners progress in reading ability, however, data in other forms are added to the visuals—excerpts from letters, diaries, speeches, poems, plays, etc. In order to eliminate the reading problems inherent in some of these source materials, the authors have adapted them wherever possible, modernizing and simplifying vocabulary and sentence structure. As a consequence, pupils have the benefit of authentic firsthand accounts without the reading difficulties such material in its original form might cause elementary school pupils.

A third piece of classroom feedback concerns illustrations. Today's pupils are unusually sophisticated—even when they cannot read. Because of television and magazines, pupils receive a great deal of their information from visuals. MAN AND HIS WORLD is lavishly illustrated to capitalize upon this. Pupils are interested in visuals and receive information from them. Thus, they should be trained to gather evidence from those visuals and to analyze that evidence just as they are trained to do with the written word.

A fourth lesson learned from the past several years of social studies research concerns the use of questioning. Work with the inquiry method has shown that there are several levels of questions that can be used successfully with young learners. These levels of questions can be classified into three major groups. First, there are the so-called “read and recite” questions—to point the pupils to various pieces of evidence in their materials and to ask them to recall what they have learned. Second, there are discussion questions which call on pupils to vocalize information and to verify it aloud. Third, and perhaps most

important, there are questions that ask pupils to manipulate, in some way, the evidence they have gathered. These “mental manipulations” entail such things as making hypotheses, forming generalizations, drawing inferences, and synthesizing information.

The authors and editors of MAN AND HIS WORLD have recognized the value of extensive questioning in helping learners to gather and evaluate information—and to develop their thinking skills. Therefore, all levels of questions appear throughout each text in this program.

In Levels 1 and 2, approximately half of each text is comprised of questions. These questions aid the learner in reading the text and the visual material. The questions also assist the teacher in testing the pupils’ comprehension. In addition, at the end of each unit at these levels, there are three special “question/activity” pages. The material on these pages ranges from meaningful recall questions to those involving higher levels of mental manipulations such as drawing inferences and hypothesizing.

Beginning in Level 3, questions printed in the margins of the pupil books are directed either toward comprehension of specific written or visual material or toward higher levels of mental manipulations. Questions of the latter type begin with phrases such as “What do you think . . . Why do you suppose . . . Can you imagine . . . How do you think. . . .” For most of these questions, there is no single correct answer. Rather, each child has an opportunity to use and express his or her own ideas based on an interpretation of the material being presented.

Meaningful recall and comprehension questions are found at the end of each large section within a unit. Additional questions and activities—called Investigating the Unit—are also found at the end of each unit.

Additional questions are contained in the teacher’s lesson plans adjoining the same-size pupil pages. Not all of these questions are essential, but by providing a large variety of questions in both the pupil texts and the Teacher’s Edition, the authors and editors of the program feel confident that each teacher using the material will have sufficient opportunity to select those which best meet the educational needs of his or her pupils.

Readability of the Series

It is an educational paradox that there is no direct relationship between a learner's reading ability and his thinking ability. Yet we continue to present young learners with textbooks that require a standard level of basic reading skills. Why? In today's busy and usually overcrowded classrooms, it is nearly impossible to personalize instruction for each child. The basic textbook, therefore, has become the most expedient way of dealing with a large number of learners who must somehow cover a large number of subjects within the school year.

The results of this situation are familiar to teachers at all grade levels. Within each classroom there will be a variety of children reading at different grade levels. In a heterogeneously grouped class, this usually means that some children will be able to read a text prepared at their grade level with little or no help from the teacher; some children will be able to read the text only if the teacher can provide additional study aids and personal assistance; and some children will not be able to read the text at all. In the case of the latter group, they are often so intimidated by the mere size of the text that self-defeat precedes any actual academic defeat.

Realizing the reading problems that exist in so many of our nation's classrooms, the authors and editors of The Noble and Noble Basal Social Studies Series have made every attempt to minimize the reading difficulties inherent in many social studies texts. They have attacked reading problems in important new ways.

First, all teachers know that most children read what they want to read. Children raised in a world of television are familiar with challenging ideas. Textbooks must capitalize on their familiarity. Therefore the writers have concentrated on presenting exciting, sophisticated material. Adults as well as children who have read this program find it interesting and challenging.

In all cases, the basic narrative of each book is *at* or *below* the reading level of the intended grade. Furthermore, an extremely liberal visual program within each text gives poor readers an opportunity to "read" pictures to help them comprehend the basic ideas.

Beginning at Level 3, marginal notes in the pupil texts assist with

pronunciation, word analysis, and comprehension. The more difficult or specialized words are both pronounced and defined in the margins next to the appearance of the word. These study aids are preceded by a small arrow ▶, and pupils should be instructed to look for an arrow when they are having word difficulties. Questions which appear in the margins are preceded by a half circle ◐. They are designed to aid in word comprehension as well as to stimulate additional thinking about the material presented. Often a new term will be pronounced, defined, *and* used in a question. These same study aids appear in the margins next to the original source materials used within the text.

The authors and editors of this program have made every attempt to select source materials which can be handled by young learners. When necessary, these materials have been modernized and simplified.

At times, the teacher may wish to read the material aloud, or to summarize the material. This gives all pupils a common basis for developing thinking skills, and it also provides excellent practice in developing *listening* skills—an area of study frequently neglected.

The physical format of the program is another important component of its readability. Type is easy to read; the pages are large, with much white space. Every effort has been made to avoid crowding the pages with materials. A busy page is inevitably associated with a textbook rather than a book read for pleasure.

Beginning at Level 4, each text is also available in paperback units. There are several advantages to this method of publishing, but two stand out as particularly relevant to children's reading problems.

First, children who are experiencing serious reading difficulties can be given one unit at a time. Each unit then tends to convey the physical appearance of a small magazine. Completion of one unit—regardless of the time it takes and the amount of assistance necessary—often gives these children a sense of accomplishment. Psychologically, then, they are better prepared to tackle another unit. Teachers using texts in this form may also select fewer units than appear in the full version of the text.

The second advantage of this dual form lies in the hardbound text itself. Since all pupils may not be studying all units in a book, or not studying them in the order in which they appear, many study aids must be repeated in each unit. As a consequence, a term which is in-

roduced, pronounced, and defined in one unit will be repronounced and redefined if it is used in a later unit. Thus, children who may have forgotten the meaning of the word over a period of weeks or months will have their memories refreshed.

In addition, the authors have carefully refrained from referring back to previous units, since some children may not have been exposed to all of the units. This also prevents pupils whose retentive powers are weak from being penalized throughout their study. The Teacher's Edition *does* indicate important cross-references, however, should the teacher wish to make use of them.

The Teacher's Edition

Perhaps no single item in any program is of greater importance to teachers than the material which is prepared for *them*. Until the early 1960s, that material was generally quite thin. In the main, it consisted of either an insert in the front of the pupil text or a sparsely annotated edition of the pupil text.

As more and more inquiry-oriented material was prepared for pupil use, however, the pendulum began to swing the other way. In some cases, the new guides gave so many directions to the teachers that they were extremely difficult to follow. Furthermore, they often made the pupil material seem more complicated than it was intended to be. In other cases, carefully detailed lesson plans provided for each day's work too often gave the impression that if they were not followed slavishly, a teacher could not hope to succeed in the new materials.

Once again, we now have the benefit of teachers' reactions to sustained use of various types of teacher's guides. The feedback indicates that teachers find the following two items of prime importance. First, that a *general* lesson plan be developed for units of work, but that the plan should not be so highly structured that the teacher cannot easily adapt it to suit the needs of any particular class. Second, teachers appreciate guide material which is on or near the pupil page to which it relates rather than a guide which is published separately.

As a result of these pieces of feedback, the series editors have designed and executed a special oversized Teacher's Edition for each book in the program. All of the teaching suggestions appear in an extra margin adjacent to the full-sized page to which they refer.

Each unit in each book has been subdivided into lessons. These lessons are based on natural breaks rather than specific number of pages. As a result, the teacher may spend as much or as little time on each lesson as class need and class interest seem to dictate.

Each unit begins with *knowledge* objectives and *value* objectives for that unit. Also included are the *skills* which can be developed or reinforced within that unit. Objectives are further broken down at the beginning of each lesson within the unit. It should be stressed that these objectives are only listed as *guidelines*. They need not be followed slavishly—or even at all—by teachers using the material.

Each lesson within the unit begins with an Introduction. Again, this is but *one* way of introducing the lesson to a class. There are countless other ways to stimulate a group of children to think about a new topic. Teachers are encouraged to use their own ideas as well.

The Lesson Development which comprises the guide material consists mainly of questions and activities which correspond to each pupil page. Again, it is hoped that the teacher will select only those which seem suitable for a particular class—but the important thing is to have a sufficient number to choose from.

In Levels 1 and 2, each unit begins with a section entitled Developing Reading and Vocabulary Skills. In Levels 3 through 6, each unit contains reading skills lessons based upon the social studies materials therein.

Each guide also contains additional reading materials for the pupils.

A final word on format. The authors and editors of the Noble and Noble program believe that a teacher's guide should be a personal thing—that lessons cannot and should not be standardized. Therefore, teachers are encouraged to write in additional material—questions, activities, titles of available audiovisual material, etc.—which will make their guide a far more useful and personal one than any which could be prepared for them.

The Noble and Noble Audiovisual Program

A unique audiovisual program has been developed to accompany Levels 3 through 6 of MAN AND HIS WORLD. Based upon the awareness that children today are sophisticated in the techniques of sight and sound, the MAN AND HIS WORLD A/V program uses specialized sound and filmstrip techniques to extend the concepts and information in each text.

As in the texts, the Transitional Approach is used. The children are given information in an exciting presentation and encouraged to think about it and explore further on their own.

The audiovisual kit for each level contains: 6 sound filmstrips (using cassette tapes), 1 cassette-taped reading lesson, 1 spiritmaster book and teacher's guide, 1 set of picture cards for individualized or group use, 1 wall chart.

The Testing Program

The testing program is designed to assist teachers in measuring the performance of their pupils—their mastery of basic concepts, their facility in using cognitive skills, and their achievement of value and behavioral objectives. The tests are not designed solely for evaluation and measurement, however; they are meant to be part of the learning process as well. Through them the pupils will advance their knowledge and gain practice in using the basic social studies skills.

The tests for all grade levels include short-answer questions designed to test cognitive skills as well as factual knowledge. The tests also include open-book exercises designed to measure the individual pupil's ability to analyze and apply data. Levels 5 and 6 contain short essay questions to test the pupil's ability to synthesize data.

People and the Land

People and the Land describes the ways people live in different geographic areas and examines the development of technology at various periods of history. *People and the Land* explores the way people adapt to their environment and how they change the environment to suit their needs; *People and the Land* shows how, by working together, people can use even the simplest tools to develop a way of life. Pupils gain insight into the concept that different peoples have different values—and that the values of each are important. Data is presented in the form of text and pictures, and different levels of questions help the pupils to read, to recall, to analyze, and to conceptualize.

Books for Teachers

BENNETT, WENDELL C., and BIRD, JUNIUS B. *Andean Culture History: The Archaeology of the Central Andes from Early Man to the Inca*. N.Y.: Natural History Press. Two regional coverages of Latin America in terms of archaeology.

BRUNER, JEROME S. *The Process of Education*. Cambridge, Mass.: Harvard University Press. Presents the intellectual and philosophical bases of education and the processes by which children learn.

CHARD, CHESTER S. *Man in Prehistory*. N.Y.: McGraw-Hill. An account of the development of cultures around the world.

CULBERT, PATRICK T., and SCHUSKY, ERNEST L. *Introducing Culture*. Englewood Cliffs, N.J.: Prentice-Hall. Deals with the general nature of culture in terms of anthropology.

DEUTSCH, KARL W. *Politics and Government*. Boston: Houghton Mifflin. A comparison of the political systems of five modern countries: the United States, the Soviet Union, the United Kingdom, France, and the German Federal Republic.

ESTVAN, FRANK J. *Social Studies in a Changing World: Curriculum and Interaction*. N.Y.: Harcourt Brace Jovanovich. Considers new approaches to the social studies and new ways of involving children in learning situations.

FENTON, EDWIN. *Teaching the New Social Studies in Secondary Schools: An Inductive Approach*. N.Y.: Holt, Rinehart & Winston. One of the foundations of the inquiry method of teaching social studies.

FERKISS, VICTOR. *Technological Man: The Myth and the Reality*. N.Y.: George Braziller. A qualified view of the future relationships between man, society, and burgeoning technology.

HERRING, HUBERT. *History of Latin America*. N.Y.: Alfred A. Knopf. A general introduction to the various aspects of Latin American development.

HOMANS, GEORGE C. *The Nature of Social Science*. N.Y.: Harcourt Brace Jovanovich. Considers the scientific method and its place in the social sciences.

HSÜ, IMMANUEL C. Y. *The Rise of Modern China*. N.Y.: Oxford University Press. A detailed study beginning with the Manchu dynasty.

KRIMERMAN, LEONARD I. *The Nature and Scope of Social Science: A Critical Anthology*. N.Y.: Appleton-Century-Crofts. Deals with scientific method; the philosophy, nature, and methodology of the social sciences; and values and objectivity in the social sciences.

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MORRILL, RICHARD. *The Spatial Organization of Society*. Belmont, Calif.: Wadsworth Publishing. Contains the broad outlines of a theory of spatial organization and behavior, and a presentation of current research within this general structure.

MURPHY, GARDNER. *Freeing Intelligence Through Teaching*. N.Y.:

Harper & Row. Considers children's natural intelligence and how it can be cultivated through effective teaching methods.

PELTO, PERTTI J. *The Study of Anthropology*. Columbus, Ohio: Charles E. Merrill. A concise and readable description of the nature of anthropology, its methods and fundamental ideas.

PIRENNE, HENRI. *Medieval Cities: Their Origin and the Revival of Trade*. Princeton, N.J.: Princeton University Press. A controversial social and economic history of the medieval city.

RATHS, LOUIS E., HARMIN, MERRILL, and SIMON, SIDNEY B. *Values and Teaching: Working with Values in the Classroom*. Columbus, Ohio: Charles E. Merrill. Analyzing the role of teaching in the development of values.

SCRIVEN, MICHAEL. *Values in the Curriculum*. Indiana: Social Science Education Committee. Considers the place of values in social science education.

SHAFTTEL, FANNIE R. and GEORGE. *Role-Playing for Social Values: Decision-Making in the Social Studies*. Englewood Cliffs, N.J.: Prentice-Hall. Discusses role-playing and how it is effective in helping children to form values and make decisions.

SHERIF, CAROLYN W. and MUZAFAER, eds. *Interdisciplinary Relationships in the Social Sciences*. Chicago: Aldine-Atherton. Many promising ideas and views about how social scientists can move toward more interdisciplinary studies.

**MAN AND HIS
WORLD**

People and the Land

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People and the Land



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2. Ecology]

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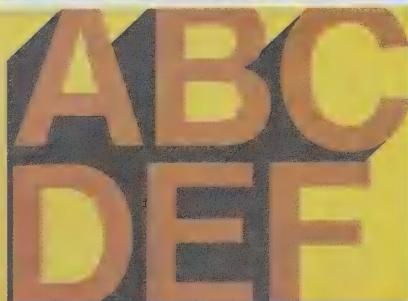


SOCIAL STUDIES DICTIONARY

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UNIT 1

READING LESSON: STRUCTURAL ANALYSIS— IDENTIFYING INFLECTED FORMS AND SUFFIXES

Purpose

As pupils progress in social studies, they will meet many words they have never seen before. They must develop strategies to decode these words.

Introduction

Tell the class: "Pedro was playing baseball with his friends one day. He reached for a fly ball and it slipped through his fingers. Another ball came his way, and as he jumped to catch it, it hit his glove and rolled away. 'Wow!' said the coach. 'Pedro just can't find the handle on the ball today!'"

"When we meet a new word in our social studies book, do we find the 'handle'? If we can find something about the word that we *know*, it will help us figure out what the word means and how to pronounce it."

Development

Say: "The first 'handle' we grab for is usually the beginning letter. But the ending of the word can be important too. Lots of words are words we already know with some little ending added—like *s* or *es* or *ed* or *er* or *ly*. What ending has been added to these words? (All are taken from Unit 1.)

<u>guesses</u>	<u>creatures</u>	<u>represented</u>	<u>exactly</u>
<u>axes</u>	<u>passed</u>	<u>invented</u>	<u>slowly</u>
<u>described</u>	<u>painter</u>		

"Sometimes, when you take off the ending to figure out a word, you do not have a complete word any more. Maybe a consonant was dropped or a consonant was doubled. Think about the changes that have been made in these words from Unit 1. What was the root word?"

knives tastier discoveries specially wrapped

"A *suffix* is a word ending. Look for suffixes that you know, and separate them from the rest of the word in your mind's eye. Then figure out the root word. What suffixes do you recognize in these words? What was the root word?"

Write the following words on the chalkboard:

scientist	agricultural	invention
successful	information	dangerous
different	southern	
democratic	government	

Application

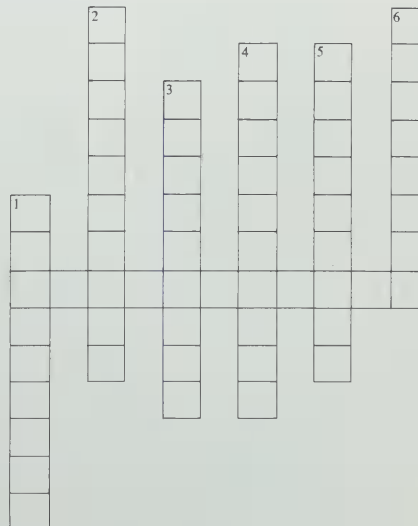
Say: "So far we have been studying new words, but not talking about what they mean. If you can work the puzzle I am going to pass to you, using some of the words on the board, you will prove that you know what some of these words mean."

Duplicate the following puzzle:

READING DOWN:

1. A person who studies things in nature, gathers evidence about them, and tells us what probably happened long ago is a _____.
2. When things turn out well, they are _____.
3. Saber-toothed tigers are _____ animals.
4. A government in which the people elect their leaders is _____.
5. Something made up by man to make life easier, such as the wheel, is called an _____.
6. The opposite of northern is _____.

QUESTION: What word did you spell across?



ANSWERS: (1) scientist, (2) successful, (3) dangerous, (4) democratic, (5) invention, (6) southern. *The word spelled across is information.*

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MARCUS, REBECCA B. *The First Book of the Cliff Dwellers*. Ill. Julio Granda. N.Y.: Franklin

Watts. A collection of interesting maps, drawings, and black-and-white photographs supplement the story of the cliff dwellers of southwestern Colorado.

TREECE, HENRY. *The Dream Time*. Ill. Charles Keeping. Des Moines, Iowa: Meredith. A beautifully evocative story of harsh Stone Age life and a boy's desire to make beautiful things rather than fight and kill.

READING LESSON PLANS

EARLY PEOPLE

The old man sat in the cave, warming his hands over the fire. He was safe for a while from the animals and the rain outside. Suddenly, he imagined a new world—one where his family would never know hunger or fear or cold. But the old man shook his head at the thought. Could such a world ever be possible?



Knowledge Objectives

Understanding that people have developed many different ways of life, or cultures.

Understanding that archaeologists and anthropologists have been able to reconstruct past ages and cultures by studying artifacts, fossils, and other kinds of evidence.

Knowing that one of the great achievements of early peoples was the using and making of tools.

Knowing that a tool is any object or idea that helps people live. Understanding that Stone Age people used only stone, bone, and wooden tools.

Understanding that the invention of farming revolutionized people's way of life.

Value Objectives

Appreciating the ability of people to meet great challenges, such as the Ice Age.

Appreciating the inventiveness of early people.

Skills

Reading maps and diagrams to obtain information.

Making inferences about past events from visual evidence.

Evaluating the importance of the many developments man has undergone.

Comparing and contrasting our way of life with that of an isolated primitive tribe in the Philippines.

LESSON 1 (pp. 2-6)

Lesson Objectives: Understanding that Stone Age people are any people who use *only* stone, bone, and wooden tools. The Tasadays of the Philippines are an example of a Stone Age people today.

Lesson Skills: comparing and contrasting, evaluating, reading maps, inferring

Introduction

Collect pictures showing people of different Stone Age periods. Try to find pictures of people with tools. Include: early peoples, such as Neanderthal Man, Peking Man, and Cro-Magnon; early hunters, farmers, and craftsmen; and Stone Age people of today, such as the Tasadays. Have the pupils select the pictures they think show Stone Age people. Ask: "How did you decide which people belonged to the Stone Age?" Read the marginal definition on page 3 to the class. Instruct the pupils to look at the pictures again. Point out that all the pictures are of Stone Age people. Tell them that when people say "Stone Age," they usually mean the time, long ago, when no one had learned how to use metal. But any people, even of today, who never learned how to use metal and who use only stone, bone, and wooden tools, are Stone Age people.

Lesson Development

Tell the class to read page 3. Develop the idea that some people remained isolated for a long time because of the location and difficult terrain of their land. Therefore, changes that occurred in the rest of the world passed these people by.

The Tasadays: Stone Age People Today



Find the Philippine Islands on the map. Now find the southernmost big island in the group. Deep in the heart of the mountain **rain forest** live a small group of people. Scientists call them the Tasadays.

In 1972, there were only 27 Tasaday people in the world. They lived high in the mountains. In their mountain land, the sun seldom shines, for the trees and vines block the sun out.

For thousands of years, perhaps, the Tasadays have lived away from other people. It is hard to climb the steep mountains, and few outside people came to the rain forest. But a few years ago, a hunter from a nearby community came to the mountain land. And the life of the Tasadays began to change.

Scientists say that the Tasadays are a **Stone Age** people. You live in a world of cities and crowds, of television, and typewriters. The Tasadays live the way people lived long ago.



◆ A rain forest is a rainy land with many trees and vines.

◆ tas a dīz'

◆ The Stone Age was the time when all of man's tools were made of stones, bones, and sticks.

Have the pupils look at the map on page 3 and identify the area they just read about. Have them find the area on a globe or world map. Tell the pupils to find the equator. Inform them that the lands on and close to the equator are very hot. Ask: "Are the Philippine Islands near the equator? Is the weather hot in the Philippines?" Next, have the class look at a land map of the Philippines. Ask: "Are there many mountains on Mindanao (mīn' də nă'ō), the island where the Tasadays live? Are they high? What kind of mountain land does page 3 tell you that Mindanao has?" Tell the class that until about 30 years ago, few people visited the interior of Mindanao. Ask: "Do you think it is easy to travel around Mindanao? Why or why not? Would it be an easy place to visit without modern boats, planes, and helicopters? Why was it possible for the Tasadays to stay alone for so long without knowing about the outside world?"

Instruct the class to read page 4. Elicit the idea that the Tasadays are food-gatherers. They are not even hunters, really. Ask: "Do the Tasadays farm for food? How do they get their food? their water? What kind of food do they eat?" Tell the class that people who pick and dig up food and catch small animals are called food-gatherers. Early Stone Age people probably gathered most of their food. Also, tell the class that the Tasadays are just beginning to hunt. It was the hunter who found the Tasadays who taught them to use traps for catching animals.

Help the pupils discover that the Tasadays live in a benevolent land in many ways. They did not come into contact with anyone else before because they did not move about. Their land gave them what they needed to survive. Ask: "What kinds of animals do you think the Tasadays catch in their traps?" (monkeys and wild pigs) Help the class look in an encyclopedia and find that the Philippines have few large animals. You may wish to point out that the Tasadays told an interviewer that they were afraid only of thunder and snakes. Ask: "Does the land of the Tasadays seem to be a peaceful, friendly, and warm place? Do the Tasadays look around for enemies when they go looking for food? Do they seem to have enough to eat? Do you think the Tasadays ever have to move elsewhere to find food? Do the Tasadays *need* to move? Do they *need* to change in order to survive?" Have the class read page 5. Ask: "Why can't the Tasaday 'houses' be seen from a few yards away? (Make sure the pupils know what a yard is.) Are the caves fairly large? How do you know?" Have the pupils describe what they think it is like inside the caves. If they do not mention that fires are burning in the caves, point out that page 4 mentions fires. Ask: "Do the Tasadays need fires in their caves for other reasons besides cooking food?" Tell the class to look at the picture on page 5. Explain to the pupils that the tool on the rock is a hammer-ax. Ask: "Why is it called a hammer-ax? Does the man in the picture look like a Stone Age man?" Have the pupils explain their answers.

◆ Edible (ed' ə bəl) means that it can be eaten.

Scientists believe that by studying the Tasadays they can find out more about life long ago.

The following pages were taken from a story by a writer who visited the Tasadays. As you read, ask yourself about the Tasaday way of life:

What kinds of tools do the Tasaday people have? Are these like your tools or like those of people long ago?

How do the Tasaday people get food? Do they need money to get the things they need? Do you think you could get food the same way they do? Why or why not?

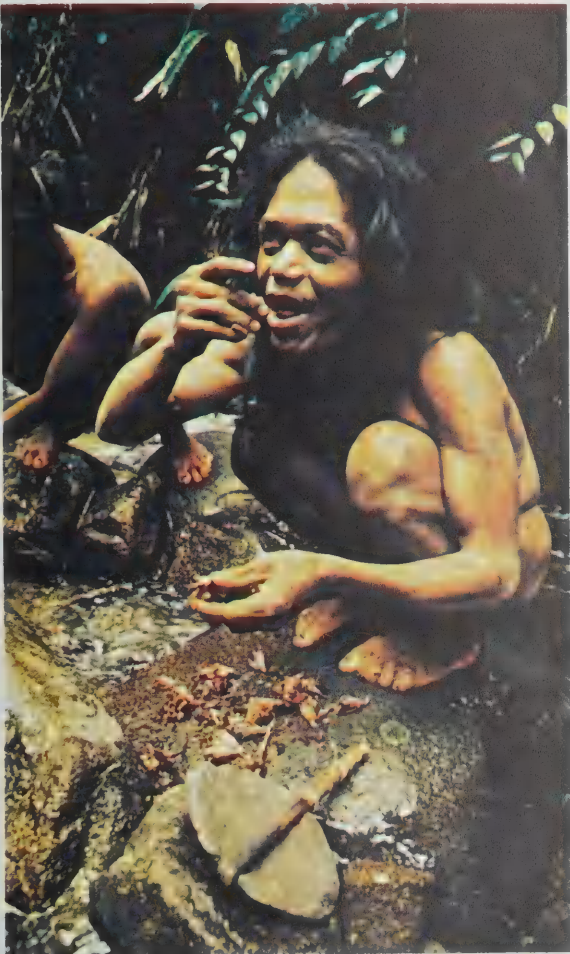
Do the Tasaday people live in groups? Do they do things together? Do they do things for each other? Could people live by themselves? Could early people have lived without others?

Getting Food

At daybreak, many of the adults were up. The men set out on their search for food for the day. The women who planned to go out with their children would leave a little later. First they would cook the food left over from the day before. They threw more firewood into the fire.

However, two of the hunters went to check their traps. They stopped at a number of pools for some tadpoles and crabs. They caught these animals easily. Later the catch was collected, wrapped in a leaf, and tied into a neat package with a vine.

Along the way, the hunter showed us some berries that were ready to be picked. But the wild bananas along the stream were not yet ready for eating. The hunters picked any edible leaf, shoot, or fruit they found as they walked.



The Tasadays find all they need in their forest home. They rarely go hungry. Yet they spend a lot of time looking for food. Why do you think it takes the Tasadays so long to find food? What do you think the man in the picture does with the tool next to his foot?

A Place to Live

The Tasaday houses cannot be seen from an airplane, or even from a few yards away. Their “houses” are three large caves. The sun shines on them only a few hours in the morning. Near the caves, there are 150-foot-tall trees, tall bamboo and towering palms, bushes, plants, and vines.

Tell the class to read page 6. Ask: “What is an edge-ground scraper?” Help the children figure out the answer themselves. Ask: “What is a scraper? What does ‘He ground its edge’ mean?” Explain that one side, or edge, of the scraper was sharpened by being ground away, probably with another stone. Ask: “What do the Tasadays do with the scraper and hammer? How do they cut vines and leaves? How do they skin small animals for meat? How do they sharpen the ends of sticks and bamboo?” Tell the class that the Tasadays share their tools. Ask: “Why do they do this? Do all the Tasadays need to have their own tools?”

Develop the idea that the Tasadays did not learn to master, or control, their environment to give them more food or comfort. Ask: “Do the Tasadays get everything they need from their land? Have they cut down forests or widened streams? Have they changed their land in any way?” Explain that, like people of the Old Stone Age, the Tasadays have not changed their land. They live with nature, taking only what is necessary. Ask: “How does this way of life differ from that of more advanced peoples? Did you learn anything about Stone Age people of the past by studying the Tasadays?”

Tell the class to look at the picture on page 2 again. Point out that the Tasadays are making things they learned about from the strange hunter—probably platforms for sitting and sleeping. Ask: “Are the Tasadays beginning to change their land? their ways? Why are they changing now?” Tell the class that often new ideas and inventions are brought from one place to another by explorers, travelers, and people moving about looking for new homes (cultural diffusion).

Activities

1. Have the pupils write a composition on the topic "Tasaday Parents Teach Their Children What Is Important." Tell them to use their imaginations in thinking up things Tasaday children need to know to survive.

2. Have the pupils pretend they work on a newspaper. Tell them to write a front page—headlines and a few paragraphs—explaining that a Stone Age people called the Tasadays have been found. Have the pupils tell why it is an important and unusual event. Have the class list five questions that they, as reporters, would like to ask the Tasadays.

Answers (p. 6)

1. A rain forest is a rainy land with many trees and vines. Tall trees and many bushes and vines grow there.

2. The Tasadays are a Stone Age people of the Philippines. They are called a Stone Age people because they live in the same way as the people of the Old Stone Age.

3. They make animal traps, other tools, and the few clothes they wear.

4. A hunter from a nearby area brought the Tasadays metal tools and weapons, some cloth, and baskets. These new tools will enable them to have more food, to keep warmer at night, and to carry more than they once did. They will have a more comfortable life.

5. The Tasadays seem very friendly. (Most of the pupils probably think of Stone Age people as fierce savages.)

◆ Rattan (ra tan') is a strong fiber from a plant.

► What do you think a strike-a-light is? How do you suppose these things changed the Tasaday way of life? Would it be easier to get food with a metal knife or a stone chopper? Now that the Tasaday have steel, do they live a Stone Age way of life?

Tools

According to several experts, the most important Tasaday tools before outsiders came were a "hammer" and an edge-ground scraper. Each of these was made by cutting a piece of rattan or a branch on a stone in the river, and then tying this handle on with vine or split rattan.

When the outsider came, he gave them some bows and iron-tipped arrows, a few metal-tipped spears, some pieces of cloth, some baskets, a short piece of brass wire, and three knives. He also gave them strike-a-lights.

The People

The Tasadays greet all newcomers with great courtesy. They repeat the person's name (which they never forget) with the words *Ka Kai*. *Ka Kai* is the Tasaday word for friend. They usually leave a group with a smile for everyone.

The Tasaday way of life is very old. But in many ways it is like your life, too. People have always lived upon the land. They have always needed food. They have always needed clothing and a warm shelter. They have always needed to live with other people.

1. What is a rain forest? What kinds of plants grow in the rain forest?
2. Who are the Tasadays? Why are they called a Stone Age people?
3. What are some of the things the Tasadays make with their tools?
4. What brought change to the Tasadays? Will these changes make their life easier? Why?
5. Do the Tasadays seem friendly? Do you usually think of Stone Age people as being friendly?

Lesson Objectives: Understanding that there are different explanations for how and when people came to live on earth. Understanding that early people survived great changes in their environment, especially during the Ice Age.

Lesson Skills: comparing and contrasting, reading maps and charts, evaluating

A Creature Called Man



Introduction

Tell the class to think back to what they learned in Lesson 1. Ask: "Why didn't the Tasadays need to leave their homes and move elsewhere? Why didn't they need to change?" Elicit the answer that the Tasadays had a favorable environment and sufficient food for their numbers. Ask: "Do people in other parts of the world live in warm, pleasant places that have enough food for everyone?" Tell the class that throughout the past, people have faced great challenges. No one knows how far back in time the challenges began because no one knows for certain when people first appeared on earth.

Lesson Development

Read the first part of page 8 to the class. Have them do the exercise you read aloud. Ask: "Is it important to you to know how old you are? Do you want to know as much about yourself as possible? Is the fact that people want to know how things work and find answers to questions an important part of being a human being? Is curiosity important to your way of thinking?" Tell the class that one of the things people have long been curious about is their beginnings on earth.

Have the pupils read the rest of page 8. Ask: "How does the Bible explain the beginnings of people on earth? How did God make people different from other creatures?"

◆ Dominion (də min' yən)
means complete power.

What are human beings? Where did we come from? How do we live?

People have asked these questions for a long time. They have answered them in many different ways. How would you answer the question, "What are human beings?"

Think about the question for a while. Then, in your notebook or on a separate piece of paper, make a list of your answers. As you read this section, reread your list. You will want to add to your own ideas. Perhaps you will want to cross out some of your ideas. The question is very big. And the answer is very hard. Human beings are very complicated.

THE FIRST PEOPLE

For thousands of years, people have thought about their beginnings. Even today people disagree. The Bible says,

And God said, Let us make man in our image, after our likeness: and let them have dominion over the fish of the sea, and over the fowl of the air, and over the cattle, and over all the earth, and over every creeping thing that creepeth upon earth.

So God created man in his own image, in the image of God created he him; male and female created he them.

(Genesis 1:26-27)

Many scientists, however, believe that men and women developed very, very slowly into what they are today. They believe that the first

living things were tiny one-celled creatures that lived in the sea. Very slowly, scientists think, some creatures developed that could live on earth and breathe air.

Evolution According to this theory, more and more complicated creatures were formed over millions of years. Some scientists say that people evolved from earlier beings that lived on earth. This theory is called **evolution**.

How old are we? People do not agree about how man came to live on the earth. But they do agree that people have lived on the earth for a long, long time. More than 2 million years ago, perhaps, people started to live on the earth.

Compared to the age of the earth, human beings are very young. You might almost call them babies. If you look at the next page, you can see how new human beings are.

Each dot on the page stands for a million years. The first dot in the upper left-hand corner of the page stands for the time when the earth began. That was more than 4 billion years ago. The whole story of modern human beings would be represented by *less* than the last three dots!

THE EARTH—OUR HOME

What was the earth like even 2 or 3 million years ago? No one really knows. You may have pictures of the block you live on from 10 years ago. But millions of years ago, there were no

◆ A cell is a tiny unit of life. All animals and plants are made up of cells.

◆ Evolve (i vōlv') means to develop very slowly.

Tell the class to read the paragraph on evolution on page 9. Make sure that they know what a cell is. Tell the class: "About 300 years ago a scientist named Robert Hooke looked at a very thin piece of cork through a microscope (an instrument that makes very tiny things large enough to see). What Hooke saw did not look like cork. He saw a number of watery-looking boxes, all joined together. Each box had a darker round shape in it, and the boxes reminded him of chambers, or cells. Today we know that all plants and animals are made of such cells. Scientists think that millions of years ago, there were only cells floating around in water. Slowly they became more complicated. They developed into living things."

Tell the class that some people believe in the Bible, and others believe in evolution. And still others believe in both the Bible and evolution. They think that God created people—but slowly, by evolution. Explain that so far no one has been able to prove exactly how people came to live on earth.

Have the class read page 9 and page 11 up to the section on the Ice Age. Tell the pupils to look at the dot chart on page 10. Ask: "How old is the earth? How long ago did cells first appear? birds? dinosaurs? fish? Was the earth without life for a long time? How long? What does the dot chart tell you?"

Tell the class that scientists have discovered many ways to test things and find out how old they are. They can even test the age of the earth. Have the class turn to page 30 and look at the diagram there. Ask: "Does the earth leave clues to its past? How can scientists tell whether there have been changes in the earth?"

Point out to the class the difficulty of reading clues and of proving or disproving a hypothesis. Explain that often it is difficult to “read” what you see. Scientists study their evidence for a long time. They test it again and again to make sure they have “read” it correctly.

Give the class the following example. Tell the pupils to think back to the days when all boys and men had short hair. Have them suppose that someone looked at people and made the following hypothesis: *The reason that boys have short hair is that it will not grow long.* Have the class prove or disprove the hypothesis. Have them figure out how they can test the truth of this statement. (They would have to cut the hair of boys and girls around the world to equal lengths and watch it grow for months. They would look at pictures of people in the past to compare hair lengths with those of today.) Point out to the class that they would have to examine the problem in as many ways as possible. They should be prepared to answer any questions anyone asks.

The Earth's birth
4 billion years ago



• Each dot equals one million years

Living cells

Fish

Dinosaurs

Birds

People

The present

THE AGE OF THE EARTH

cameras. There were no drawings. And there were no books.

Yet scientists can study evidence and make educated guesses. They study rocks, rivers, soils, mountains, oceans, and caves. They gather evidence like detectives in a television mystery. So their guesses are more than just guesses. They are guesses based upon information. We call such guesses **hypotheses**.

The Ice Age Scientists think that the earth was very different a long time ago. Once much of the earth was covered by ice. If you live in the northern part of the United States, your whole state may have been completely covered by ice. The ice sheets were as high as a modern skyscraper. Could human beings hunt or grow food on ice as high as a tall building?

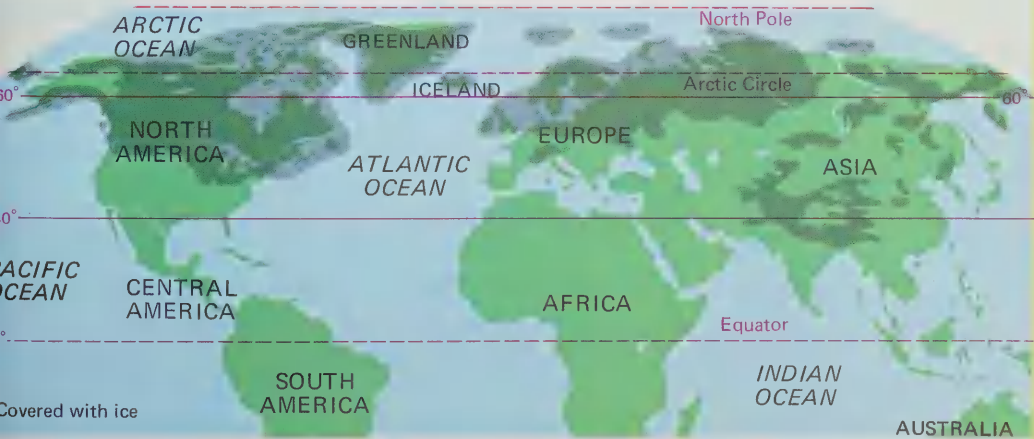
Look at the map on this page. It shows the whole world. The parts that were covered by ice are shown in blue.

◆ hī poth' ə sēz

► Find the map on page 12, and compare it with this one. Which two countries in North America were once covered with ice? Name three countries in Europe and Asia that were once covered with ice. Do you think anyone could have lived there then?

Have the class read the rest of page 11. Tell the pupils to study the map on the page. Next, have them find in an atlas a population map of the world. Ask: "Do any of the areas that were once covered with ice have many people living there today? Which areas? (Germany, England, around Lake Michigan, parts of Massachusetts and New York) Has the earth changed much since the Ice Age?"

Tell the pupils to suppose that early peoples did not know there was land beneath the ice. Have the class draw the land areas on the map on page 11. They should not include the areas covered with ice. Tell the class to compare their drawings with the map on page 12, which shows the land areas of today. Ask: "Did North America, Europe and Asia look very different when early peoples lived there from the way they look to us today?" Now find a large map of the world and have the pupils use it to help them do the exercise in the margin on page 11.



World During Ice Age

Have the pupils read page 12. Tell them to do the exercise when they go home. Explain to them that scientists think the Ice Age began a little over a million years ago and ended a little less than 12,000 years ago. The climate was not always the same during the Ice Age. At times, the water became warmer and the ice began to melt. It did this four times during the Ice Age. Each of the warming periods lasted as long as 30,000 years. For this reason, scientists do not know for certain whether the Ice Age has really ended or whether we are in another "in-between" period. Ask: "Do you think we will have another Ice Age?"

Instruct the pupils to read the first half of page 13. Tell them that people lived near the ice areas. They hunted the animals that thrived in cold climates. Ask: "What did these people do when the ice melted from their part of the world?" (They moved north when the animals they hunted moved north, or they found new ways to live.) Ask: "Would people who stayed where they were have to find new ways of hunting? Would they have to learn habits of other animals? Would they have to learn about the new plants? Why did people begin to spread out? How did the ending of the Ice Age cause many people's way of life to change?"



World After Ice Age

Put an ice cube on your kitchen counter. Blow on it. As you blow, does the ice move or does it remain still? Well, the ice that covered the northern part of the world was a little like a giant ice cube. Time after time, the ice sheets moved south. As the ice moved south, the earth became cold and rainy. People and animals also moved south. What would your family do if a giant sheet of ice came down from the north?

Sometimes the ice sheets melted. Then the land grew warmer. Food could grow.

The Ice Age ends Finally, most of the ice melted. This took half a million years—a very long time. What happens when you melt an ice cube? The ice does not just go away. It becomes water. That is what happened to the great sheets of ice. They became water.

Where do you think the water went? Think of all the biggest places with water on the earth. What are they called?

Other things happened when the ice melted. Rivers and lakes were formed. Trees and grass and plants began to grow. In some places, whole forests grew up.

Some of these plants could be eaten. And so, animals, and perhaps people, began to go into places once covered with ice. Slowly, because the whole earth was warmer, people began to spread out.

Half a million years ago, the earth became something like it is today. Only in the very far north and the very far south are there still large sheets of ice all year around.

► The word for the type of weather a place has is *climate*. Plants grow where the climate is good for them. Do you live in a warm climate or a cold climate?

PEOPLE—WHAT WE LOOK LIKE

By about half a million years ago, there were people who looked much like us. But, what do we really look like? Go back to the page in your notebook where you described human beings. Now describe what you look like.

People are alike People have different colored skins and different colored eyes and different colored hair. But all people are alike in many ways. In fact people are more alike than they are different. That is what makes them people, rather than roses or puppies or snakes.

Bits and pieces First describe your head. What is in it? What makes you able to read this page? What makes you able to *see* this page?

Activities

1. Help the class draw a time line of the earth from the beginning to the present. Include the Ice Age and information in the dot chart on page 10.
2. Tell the class to imagine that they are explorers of the Ice Age. Have them write letters home explaining what they saw in the icy northern lands. Tell them to look in books and encyclopedias for information about Ice Age animals and the way the ice moved. Use the information to think up adventures they can write home about.

LESSON 3 (pp. 13–15)

Lesson Objectives: Understanding that people have more similarities than differences. Understanding that people's physical makeup is unique to humans.

Lesson Skills: evaluating, inferring, classifying

Introduction

Tell the class to think about the hardships of many early people and about how they had to migrate when the ice moved south. Tell them to remember how people learned to live in different climates and were faced with new experiences. Remind the pupils that many animals that lived during the Ice Age did not survive. Ask: "Why do you think early people were able to survive the Ice Age?"

Lesson Development

Have the class read the second half of page 13 and do the exercises there. Next, have them read the section on the thumb, on page 14. Tell the class that man has an "opposable thumb." That means it can reach across the palm and touch each finger opposite, or "face-to-face." Instruct the class to look at the dog's paw pictured at the top of page 14. Ask: "Do dogs have thumbs? Can a dog hold things?" Next, have the class look at the paw of the tree shrew shown below the dog's paw. Compare it with the man's hand. Ask: "Can a tree shrew touch his thumb easily to all of his other fingers? Why do you think his thumb curves inward? Does this make it easier for the shrew to climb trees?"

Tell the class to look at their own hands. Ask: "Why do you think you have fingernails? Do you need fingernails?" Inform the class that broad fingernails give support to fingertips and help people hold things. Have the class compare the human palm with that of the tree shrew. Ask: "Do you see any differences between the two?" (People have wide palms, whereas monkeys and shrews have thin palms and longer fingers.) Ask: "Is a wide palm good for holding things? Is it better for getting a good grip on things?" Tell the pupils to make a fist. Ask: "What does the thumb do when you make a fist? (It helps hold the fingers tight together.) Would claws get in the way? How did having an opposable thumb help early people to survive? Did it help them make things? Did it help them use tools and weapons?"

Have the class read the section on pages 14–15 on standing upright. Tell the class to look at the picture on page 15. Next, instruct the pupils to



► hō' mō sā' pē ənz

What do you hear with? If you hear a loud noise or the screech of car brakes, what do you do?

What do you eat with? If you could not chew your food, would you be able to eat different kinds of food?

Now look at your hands. Spread them out wide in front of you. Look at a dog's paw. Can it do as many things as your hand can do?

The thumb Do you ever fly a kite? If so, how do you hold your kite? How do you wind the string? How do you attach the paper to the wood frame?

Tape your thumb to the palm of your hand. Now try to make a kite. Can you hold the scissors? Can you hammer the frame? Can you string the tail? How important is your thumb? Early man had a thumb just as you do. Scientists say that without a thumb early man would have been just another creature on earth. But with a thumb, man could make tools. In fact, man the toolmaker has changed the face of the earth.

Standing upright Now look at your legs and feet. How do you walk? Do you walk on all fours like a dog or a cat? If you walked on all fours, could you pick up heavy things and carry them? Could you see danger at a distance? What other advantages are there to walking like a human being?

Scientists call modern man *Homo sapiens*. The words *Homo sapiens* mean "man who knows." But scientists think some early people



stand up and bend over like the man in the picture. Ask: “Can you see very far ahead from that position? Is it hard to see up? Would it be easy to use a bow bent over? Would it be hard to throw things? How did standing upright help early people to survive? Did it help them see far in the distance? Did it help them use weapons? Did it leave their arms free to do many things—use tools and carry things?”

Tell the class to read the rest of page 15. Ask: “Do fish have brains? Do dogs? Do birds?” Explain that all animals have brains, but that man has a bigger, more complicated brain. Have the class look up the structure of the human brain in an encyclopedia. Help them find out what the brain does. Ask: “How did people’s brains help them survive the Ice Age?”

came before *Homo sapiens*. They call such people *Homo erectus*, “man who stands up.”

◆ hō’ mō i rek’ tēs

In your notebook, start a page called “Things I Do.” Starting with the first things you do in the morning, list the important things you do all day. Include the things you do in school; list the games you play on the playground. After each one, put a check mark for those that require an upright position.

Your brain What else has helped people? People have used their brains. Your brain is the part of you that can think, understand, and plan. What else does your brain do for you?

Scientists know that human beings are very intelligent. They think that men and women have always used their brains to change their environment and to make their lives better. Do you remember the scientific name for modern man? Do you agree that “man who knows” is a good name for human beings?

Activities

1. Have pupils prepare a bulletin-board display on the uses of the human hand. Include drawings or photographs showing people using their hands in many different ways.
2. Have the class collect pictures of various kinds of animals. Have the pupils study the position of the animals’ eyes. Put in three separate piles pictures showing animals with eyes on top of their head, on the side, and straight in front. Discuss why eyes are in different positions. Help the class determine that only humans and a few animals (cats and monkeys, for example) have eyes that focus in front and can judge distance in front accurately. Most animals need to see both in front and far on the side to watch for enemies. Have the class look at the pictures in Activity 1 and pull out those showing people doing things with their hands that require the ability to judge distance exactly.

LESSON 4 (pp. 16–23)

Lesson Objectives: Understanding that anthropologists and archaeologists study artifacts, fossils, and other evidence to figure out what early people looked like and how they lived.

Lesson Skills: comparing and contrasting, evaluating, interpreting pictures, classifying, recalling

Introduction

Have the class write down what they ate for dinner the night before and what dishes and silverware they used. Tell the pupils to describe whether their food was canned, frozen, prepackaged (like some TV dinners), or cooked fresh.

Tell them to imagine a scientist from the future studying the garbage and dirty dishes from the dinner. Ask: “What could the scientist tell about us from what he sees?” Guide the pupils to comment on how the dishes show the number of people in a household and the level of technology. The remains from the dinner also show whether people spent a lot of time cooking and whether food was grown in the area or had to be shipped from elsewhere (international trade). If there is evidence of more than one culture, point it out. If not, tell the pupils to suppose the scientist found some chopsticks also. Ask: “Would the chopsticks tell scientists there was more than one way of life in the area? Can you tell a lot about the ways of people from the things they leave behind?”

Lesson Development

Have the class read page 16 and the first part of page 17. Develop the concept of culture—that it is the sum total of all that people have made and built. It includes people's

“TALKING TO” EARLY PEOPLE

More than a million years ago, scientists say, there were people on the earth. What were these people like, and how do we know?

Human culture All people have a way of life. Most Americans speak English. Some speak with a southern accent, and some speak with a Spanish accent. But most speak English. Most Americans are Christians or Jews. Most Americans believe in a democratic form of government. Most Americans either go to school or have gone to school. And most Americans live in cities or towns.

All of these things make up the American way of life. We call the way of life of a people their **culture**. French people have a French culture. City people have a city culture. Is the Tasaday culture like yours?

Certain scientists study people's cultures. Two special kinds of scientists study the cultures of people who lived long ago—so long ago, in fact, that there was no writing.

How can scientists find out about people who lived before there was writing? They cannot read books written then. They cannot read letters. They cannot read old newspapers. But such scientists can “read” about early cultures in special ways.

One of these scientists is the **archaeologist**. Archaeologists are scientists who study the kinds of lasting things people leave behind. Archaeologists dig deep into the earth. They dig very carefully so that nothing is destroyed.

♦ är' kē ä'l' ə jəst

Sometimes archaeologists search for a long time and find nothing. But sometimes they find tiny clues. Most of these clues are stone tools and fossils. Most of what we know about early man comes from these clues.

After archaeologists have found stone and fossil clues, they share their information with anthropologists. **Anthropologists** are scientists who study the culture of people. Often they study cultures of long ago. Some study simple cultures today. And some study complicated cultures as well.

THE STONE AGE

The long period of time during which all of people's tools were made of sticks, bone, or stone is called the Stone Age. The name Stone Age is also given to people who still use only simple stone tools.

People of the Stone Age got all their food from their natural environment. Their natural environment was made up of all the land, water, animals, and plants that were near them. The people of the Stone Age *depended* on their environment for food. If a flood or a fire killed the animals and the plants, there would be no food.

Living in groups Early people lived in groups. They were probably not very large groups—certainly not like cities or towns of today.

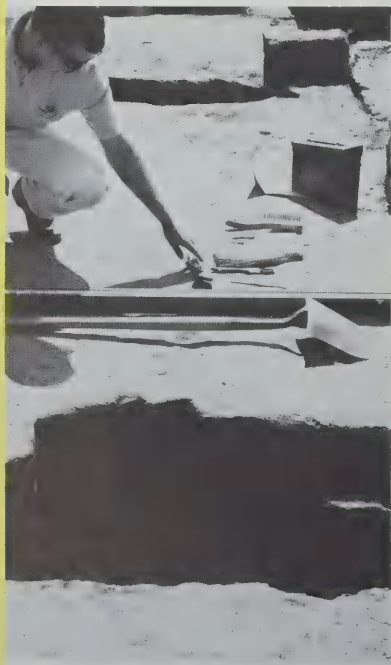
At first people probably lived in **bands**. A band might have been a group of families who were related. Scientists think there might have been around thirty people in a band.

- ◆ What kinds of things do you think archaeologists find?
- ◆ Fossils (fos'elz) are parts of ancient bones, shells, and plants that are buried in the earth.
- ◆ an' thre pol' a jests
- ◆ A band is a group of persons, animals, or things.

whole way of life—the groups they form, their languages, economic systems, government, means of education, religion and other beliefs, technology, and arts. Ask: "How would you describe your way of life?" Have the pupils finish the following sentences: "I was born in ■ _____. There are _____ people in my family. I began going to school when I was _____ years old and will continue studying until I am _____ years old. After that I will _____. What I want most in life is to _____." Compare what the pupils have written. Ask: "Are the answers given by the class alike? Do they tell you anything about your culture? What country do you live in? What language do you speak? Do you have a big or a small family? Do you go to church? Do you go to school? Do you belong to any clubs? Do you know how to use any machines or tools? Will you learn how to use more difficult machines and tools as you grow older? How do you expect to earn your living? What kind of books do you read? What kinds of food do you eat?" Tell the class that these are only a few of the things that make up a culture. Ask: "Would an Eskimo or a hunter in the Amazon jungle answer these questions the same way as you have? Does this classroom have a culture? What would archaeologists study in our classroom to understand our culture? (books, chalkboard, etc.) What would anthropologists study to understand our culture?" (What the teacher does, what the pupils do, how classroom tools are used, and what the pupils learn and why they are learning it.)

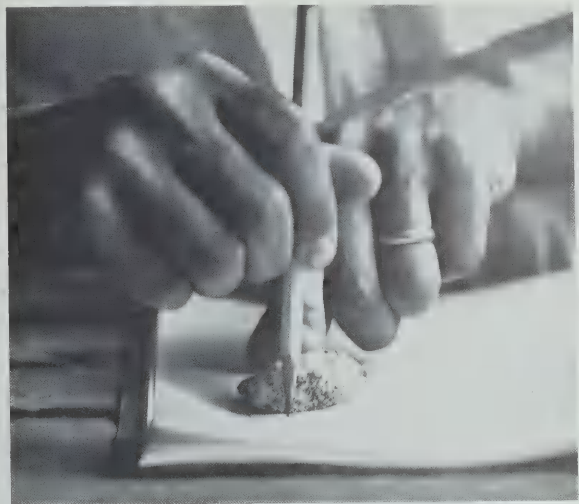
Make sure the pupils understand what fossils are—that they are parts or traces of plants and animals from the past. Tell the class that any tools or objects made by early people are called artifacts. Ask: “What fossils have you seen in museums or books?” Have the class look at the picture essay on pages 18–19. Explain that before anthropologists can study early cultures, archaeologists must find things for them to study. Ask: “Can you think of any famous ancient cities, people, or animals that archaeologists have discovered? Do you see any fossils on these two pages? Are any artifacts shown? Why is it important to know exactly how big a city was? How do archaeologists figure out the size of ancient cities? Why is it important to know where something was found? Suppose chairs were found only in the palaces of an ancient city? Would that tell you that most people did not use chairs? Would that tell you anything about a people's way of life? Would that help tell you how advanced people were?”

Have the class read the rest of page 17. Tell the pupils to think about the Tasadays and their way of life. Ask: “Do the Tasadays live in a band? Why do you think they live together rather than alone? Would people feel lonely living by themselves? Is it easier for people to fill their needs when there are more people?” Point out that the Tasadays shared their stone tools. Each person contributed to the well-being of the group.



Finding ancient ruins or any trace of early people is only part of the job of archaeologists. They must find out exactly where to dig—and how wide and how deep. They must also keep records and maps. Archaeologists work slowly and carefully so as not to miss or destroy things. They photograph and measure everything they find. Objects that are likely to fall apart are specially treated. That way, they keep for a long time. What kinds of things are likely to fall apart?





Tell the class to read pages 20 and 21. Ask: "Do the people described on these pages resemble the Tasadays? How are they like the Tasadays? How are they different from the Tasadays? How is the environment of the Tasadays different from the one described here?"

After the class finishes reading each section of these two pages, ask: "How did early people use their hands, upright position, and brains to help them survive?" When the class has finished analyzing these pages, ask: "Do these pictures show people using their environment? Are they changing it in any way?"

■ Have you ever been on a camping trip? Do you think it could make you feel like an early man or woman?

■ Why is it hard to find pieces of ancient clothing? Can you picture what it might have looked like?

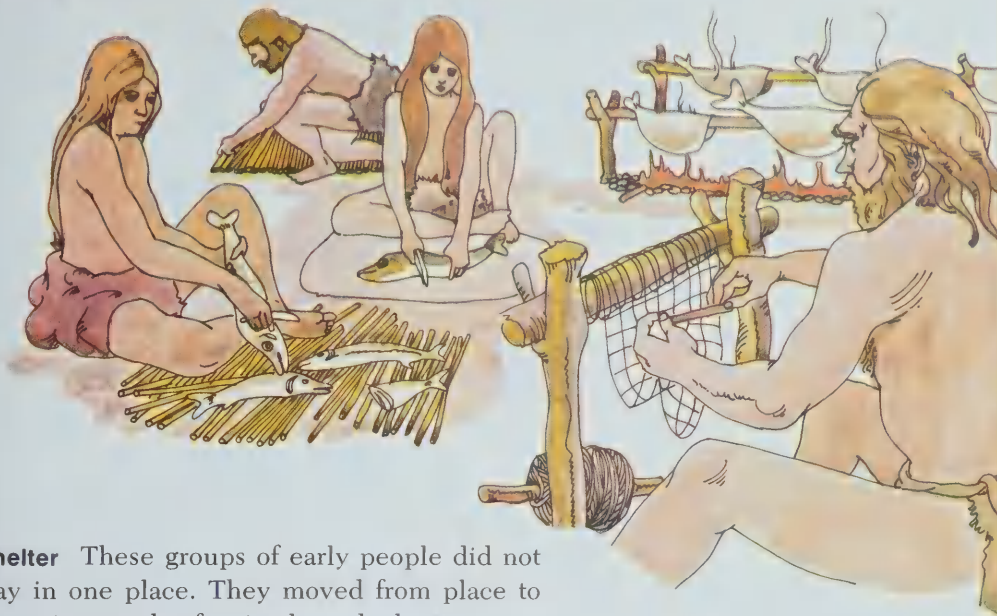
How do we know? Archaeologists and anthropologists know that early man hunted for his food. He hunted large, wild animals as well as small ones. Yet he did not have modern tools like the bow and arrow or the gun. So he could not hunt alone.

Hunting and gathering Sometimes, we know, a group of men planned a hunt together. They lighted a fire and drove the animal toward a group of men with stone hand axes.

The men in hunting groups would use their stone tools to cut up the animals after they had been killed. Then they would drag the meat back to the camp.

Scientists believe that the women in these groups gathered roots and berries for food. Women also made clothing. We know this because bone needles have been found.





Tell the class that, like people today, early people expressed their feelings in many ways. Have the pupils look at the pictures on page 22. Tell them that the picture at the top is a painting in Africa; the bottom left is of Altamira, in Spain; and the lower right shows a rock carving in Scandinavia. Ask: "How are the people in the picture on the top of the page dressed? What are they doing? Does the animal (bison) in the picture on the bottom left look like a cold-climate animal?" Mention that scientists have tested the age of the drawings at Altamira and found that they are somewhat under 20,000 years old. Ask: "Do the paintings show what kinds of animals lived in northern Spain 20,000 years ago?" The picture on the bottom right is a little different. It is a carving on rock. It probably was made a little after the Stone Age. Ask: "What tool do you need to carve on rock? (chisel) Do you see anything in this picture that tells you it might have been carved a little after the Stone Age?" (The men seem to be wearing swords—which means they knew how to smelt metal. The ax-heads could be stone or metal.) Ask: "Were early people skilled?"

Shelter These groups of early people did not stay in one place. They moved from place to place in search of animals and plants to eat. Such groups of people are called **nomads**.

Often these Stone Age people found shelter under the ledges of large rocks, in caves, or in pits. Caves were especially good places.

Caves where primitive men lived have been found all over the world. Many of these caves were near a lake or some other body of water.

Fire No one knows who made fire first. Perhaps many people did in many places. Perhaps some groups learned to make fire, and the news spread to other groups.

People could do many things with fire. It is hard to eat large amounts of raw meat. It takes a long time to chew and digest. Cooked meat is tastier and easier to digest.

Without fire, it is hard to keep warm. During the ice ages, it was very cold. Fire kept the caves warm. It also frightened away dangerous animals like saber-toothed tigers.

◆ nō' madz

► Why would Stone Age people choose to live near a place that had water? What else could the lake provide besides water?

◆ Digestion (dəjes' chən) is how your body turns the food you eat into energy and new cells.

Have the class read page 23. Ask the pupils to define a symbol, in their own words. Ask them to give some examples of symbols (musical notes, letters of the alphabet, signs showing directions by arrows or wavy lines, and so on). Ask: "Can you name a symbol for the United States? of peace?" Have the class give at least three reasons why people need a language (to warn of danger—to tell people that animals or enemies are approaching—to give orders, to teach children).

Activities

1. Have the class play a game of charades to demonstrate the importance of having a language. Have the pupils act out various Stone Age situations like "My day at the mammoth hunt" or "The ice is coming again and we must move." Tell the class that they are allowed to ask questions out loud. Ask: "Can you play the game by acting out the questions instead of asking them out loud?" If anyone says he can, let him try.



Many early people drew pictures on the walls of caves. No one knows for certain why they did this. Early art shows people and the animals they hunted. These ancient artists used paints that they made themselves.



The first man we know who used fire was Peking man. Peking man lived in China over a half a million years ago. From charcoal found in Spain, scientists guess that some bands of people there knew how to make fire too.

People and language Early man probably could not speak very well. He probably did not have a language as we know language.

Think about language for a moment. Language is one way people talk to each other. It is a way people communicate with each other.

In language, words are symbols. Words stand for things and for ideas. The word *plastic* stands for the material we know as plastic. It is not the material itself. The word *beauty* stands for something we find very pretty to look at. But the word is not beautiful itself.

Words grow as people find a need to say something. Until plastic was invented, there was no need for words like *polyvinyl*—a special kind of plastic.

So, while early man probably did not have a language, he could communicate. Probably he could warn other people in his group of danger. Maybe he grunted. But he did communicate.

◆ pē king'

◆ A symbol (sim' bl) is something that stands for something else.

◆ Why do scientists believe that it took early man a long time to make up languages?

1. About how long have people lived on the earth?
2. What is the Ice Age? What do you think life was like then? What happened to the land when the Ice Age ended?
3. How would you answer the question, "What is man?" What makes people different from other creatures?
4. What is culture? Which scientists study culture?

2. Have the class draw pictures of what they think will be the most important moment in their lives. Compare the pictures and discuss what they show about the way of life in America. Point out any common symbols shown (a diploma, wedding ring, and so on).
3. Tell the class to read about a famous archaeological discovery. Have the pupils write a report on what was found and what the discovery tells us about the past. (*Zinjanthropus* [zin jan' thrə pəs], Sumer [sū' mər], the cave paintings of Lascaux [la skə], Mohenjodaro [mə hen' jō dar' ō] and Troy [troi] are a few.)

Answers (p. 23)

1. People may have lived on earth for more than 2 million years.
2. The Ice Age was a time when much of the northern part of the world was covered with ice. Life was difficult—the climate was cold and animals were large and fierce. People had to move to find food or warmer places to live. As the Ice Age ended, the weather became warmer and land thawed, enabling plants and trees to grow.
3. The answers to this question will vary. Most pupils will say that people's hands, upright position, and brains make them different from other creatures.
4. Culture is the way of life of a people. Anthropologists and archaeologists study culture.

LESSON 5 (pp. 24–27)

Lesson Objective: Understanding that one of the great achievements of early people was the using and making of tools.

Lesson Skills: recalling, interpreting pictures, inferring, evaluating

Introduction

Have the pupils empty the contents of their pockets or purses on the desk. Tell them not to lay down anything they do not want others to see. Inform the class they are going to “read” the contents of their pockets the way a scientist would to find out whether they carry any tools with them. Pick up some of the objects on the desks and ask specific questions, such as: “Is this comb a tool? Is a key a tool? Is money a tool?” Tell the pupils that even the ordinary things that people use every day tell much about a way of life. They tell how advanced a people are. Ask: “Did early people carry any of the things on your desks?” Inform them that the things people carry also tell something about values—what people think of as being important or worthwhile. Ask: “Who do you carry pictures of, usually? Why do people carry combs? Do they think it is important to be neat? Do people use keys to lock up things they do not value? Do Tasadays or nomads carry door keys? Why not? What do people lock up most? Why is money so important? How would you live if you had no money? Why is your life so different from the Tasadays’?” Tell the class they are going to find out how people learned to use the things around them to give them a more advanced way of life—how they came to have the things they value.

Tools: How People Change the Earth



EARLY TOOLS

Almost a hundred years ago, in Spain, some workmen dug deep into the earth. They were putting water pipes into the ground.

Deep in the ground, they found bones and funny, chipped things. The bones belonged to elephants. The funny chipped things were tools—but they did not look like tools we know.

Soon scientists began to study the bones and tools. They began to “read” them. From the evidence here, scientists know that ancient people once lived here. After studying the bones and tools, scientists believe that these ancient people were probably *Homo erectus*. They believe that *Homo erectus* hunted animals, and that he lighted great fires. They believe that *Homo erectus* used different kinds of tools.

Other scientists have found the same kinds of tools in Africa. Scientists believe that people everywhere in time began to use tools. Probably they taught their children to use tools. And their children taught their children.

Using tools What kinds of tools did these early people use? And what did they make them out of? If you were going to make a simple hammer, where would you look for materials?

Early people looked around them. Perhaps they picked up a fallen branch from a tree. Perhaps they threw it at an animal. Perhaps they used the stick to knock a piece of fruit from a tree. Maybe they learned to cook a piece of meat at the end of the stick.

■ Has your father or mother taught you to use tools? Do you know how to use a screwdriver? Do you know how to use a mixing spoon? These are examples of human tools.

Lesson Development

Have the class look at the picture on page 24. Ask: “What are the people in the picture doing? What are the tools made of?” Tell the class that people have not used metal for very long—only about 5,000 or 6,000 years. In contrast, Stone Age people used stone, bone, and wood for at least 65,000 years.

Have the class read page 25. Ask: “What were the first ‘tools’? Do people still use sticks? What do they do with them?”

Instruct the pupils to read page 26 and the first two paragraphs on page 27. Have them look at the picture on page 26. Tell the pupils that it is of a North American Indian named Ishi who lived in California at the beginning of this century. Ask: “Are you surprised that someone like Ishi lived in the United States not too long ago? Why? What would Ishi lay down if he were asked to show the things he carried with him every day? What is Ishi doing with sticks that is different from what the early people described on the bottom of page 21 did?” (He is making them into tools instead of just using them as they are.)

Tell the class that during the Stone Age, people slowly improved their tools. Have the pupils look at the drawings on page 27. Ask them to explain what the people shown are doing. (Starting from the left, the men are using a chopper, scraper, hand ax or digging tool, and a spear point or blade.) Ask: "Why do you think people used stone tools for so long?" Explain that it is easier to invent things when you have other inventions, many ideas, and much information to draw from. Ask: "Do you expect to invent anything when you are older?" Ask the class if they could make all the things they use if their cities were destroyed and they had to start all over again without any books or examples. Tell the pupils that they might be able to rebuild their way of life in several hundred years because they would remember many things that have been made. Say: "Suppose you had never seen or heard of an escalator. Would it occur to you to make one? What is the most valuable tool you use?"

Activities

1. Have pupils write a composition on how stone helped people to master their environments. Tell them to include as many uses of stone as they can think of.
2. Have the class prepare a display on stone tools. Tell them to look in books and encyclopedias for information about Stone Age tools. Have the pupils collect or draw pictures showing how some of the tools were made. Help them find out about flaking and the skill it required to split stone with the "grain."



This man may have been the last North American Indian to live on his own. He made his own tools. For a harpoon, he tied two pointed sticks to a wooden handle.

Making tools In time, people began to *make* tools. This means that they did more than just use a stone or a branch as they found it. They began to change the stone to fit their needs.

Scientists have found similar stone tools in many places. For example, early people made "choppers." Scientists think that choppers were chipped from a rock the size of a fist.

Later, people invented a simple hand ax. A hand ax was a stone chipped to a sharp point. Probably people used hand axes to dig roots out of the ground and to cut up meat.

Early people also invented scrapers. With a scraper, people could scrape animal hides. A scraped hide could be used as a coat or bed.

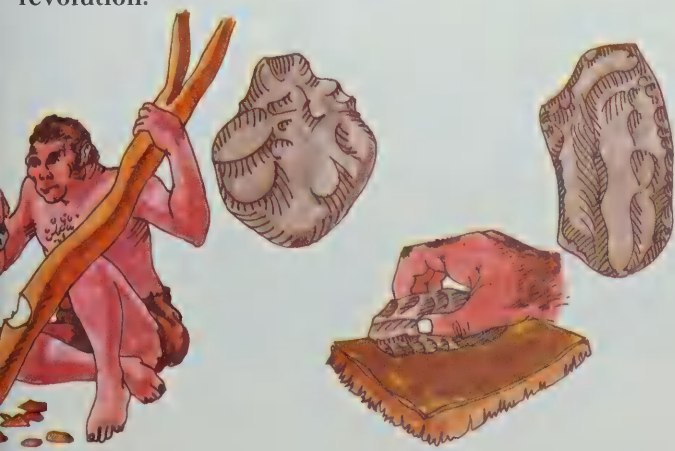
FOOD-PRODUCERS

Could Stone Age people's tools help them if there was a fire or a flood? Could their tools help them if there were no animals and plants?

Life was very hard for the people of the Stone Age. Their crude stone tools helped, but they did not help enough. If people were going to survive, they needed a steady supply of food. They also needed better shelters from bad weather and from dangerous animals.

Then, about 9,000 or 10,000 years ago, a great revolution came about. A revolution is an event that greatly changes the way people live. This great event was called the **agricultural revolution**.

► Now try something hard. Find a stone. Tap it with another stone. Does it break easily? Can *you* sharpen your stone to a point? What does this tell you about making stone tools?



LESSON 6 (pp. 27–31)

Lesson Objectives: Understanding that around 9,000 or 10,000 years ago, people changed from food-gatherers to food-producers, and that this revolutionized the way people lived.

Lesson Skills: reading maps, interpreting pictures, inferring, comparing and contrasting, evaluating

Introduction

Ask: "Is farming important to you? Do any of you plan to become farmers? Why don't more people want to become farmers today?"

Elicit the idea that with modern farming techniques it is not necessary to have a great many farmers. But people are needed for other kinds of jobs. As people began to learn modern skills, they began to think of farming as dull, unrewarding work.

Tell the class that at one time, farming was the most revolutionary and advanced job in the world. It was farming that gave people freedom to invent things and to discover new ways of doing things. It led to the world of today.

Lesson Development

Have the class read the rest of page 27. Tell the pupils that the word *revolution* comes from the Latin *re* (meaning "back" or "around") and *volvere* (meaning "to roll" or "to turn"). It has come to mean any sudden change or turning about. Point out the difference between *revolution* and *evolution* (from the Latin *e*, meaning "un," and *volvere*, "to roll," therefore meaning "to unroll"). Ask: "Why do you think the change to a farming way of life was called the agricultural revolution?"

Have the class read pages 28 and 29. Tell the pupils that the new way of life was so different from what went before that scientists call it the New Stone Age. Ask: "Why is this time still called the Stone Age?"

Have the class look at the map showing the first domesticated animals, on page 28. Ask: "Do you remember what symbols are? What symbols are there on the map? Which was the first animal to be domesticated? Which animals were domesticated next?"

Help the class discover what life was like during the New Stone Age. Divide the class into three groups. One will be the early farmers, the second will be those who domesticated animals, and the third will be the early villagers. Each group should put on a short play, using the library for additional information.

Inform the first group that they are a family of food-gatherers and hunters who are just beginning to settle down and develop a farming way of life. Their play should include answers to the following questions: "How did people learn about farming? Why did they stop moving about and searching for food? Do they still hunt sometimes? Why

♦ To domesticate (də mes'-tə kāt) means to tame something.

Farming People learned how to farm. No one knows for certain who the first farmers were or where they lived. In fact, farming seems to have begun in several places at the same time.

Farming helped to make people's lives better in many ways. Now they had a steady source of food. They could store food for the winter and for hard times.

Domesticating animals One other important event made life easier for Stone Age people. This was the taming of animals.

Stone Age men had tamed dogs to help them hunt. During the last part of the Stone Age, people began to tame other animals. They raised them to be used for food, just as they grew plants for food. Soon people had sheep, goats, pigs, and oxen for their farms.





These carvings were made by the people of the Indus River Valley in southern Asia about 4,000 years ago. Are the carvings lifelike? Do they tell you what animals were in the valley at the time?

Villages Now people did not have to keep moving to find food. Animals and plants were where people put them.

People began to build villages. They made houses out of wood poles, mud, straw, and bricks or stones. They put up fences to keep wild animals out. How do you think this changed their way of life?

Specialists Some villages began to grow more food than they needed. This meant that people had more time to do other kinds of work. It meant that people could be more artistic, and more curious about the world, too.

Some people began to specialize in certain jobs. A person could be a weaver, a toolmaker, a painter, a soldier, or a leader of the village. Can you imagine what a village like this was like? Name some specialists in your town.

◆ To specialize (spesh' ə l ī z) means to work at one thing.

did they begin to stay in one place? Why did they begin to put up sturdy buildings? Did they have to think up new tools?"

Tell the next group that their play should answer such questions as: "How did people come to domesticate animals? What do you think they did to tame animals? Is it always possible to find animals to hunt? Could people obtain more meat by raising animals? Were animals raised for more than their meat? What do dogs help people do? Why did people raise sheep? What did they want leather for?"

Inform the villagers that they are a small group of about five families, who decided to live together in the same place. Their play should answer questions such as: "Why were many villages built near rivers? Why did people form a village? Were the people related? Did people feel strongly about the houses and farms they built? Did they want to protect them? Did they want to make them more beautiful? Why can people who live in one place have more beautiful things than people who move about all the time? Why did some people become specialists? Why did strangers sometimes come and invade the village? What did the raiders take?"

Instruct the class to read page 31. Ask: "When did the agricultural revolution take place?" (9,000 or 10,000 years ago) Tell the pupils that the next great change occurred between 5,000 and 6,000 years ago. It was then that people learned how to smelt copper ore and make things out of copper. The use of metal ended the Stone Age. Ask: "At least how long did the Stone Age last? (at least 65,000 years) How long was it from the agricultural revolution to

the invention of metal? (3,000 to 4,000 years) Why were changes occurring more rapidly at the end of the Stone Age?"

Ask: "Why was the wheel an important invention? What material were early wheels made of? Why was writing an important invention? Do people have to know how to make and use symbols in order to write?"

Make sure the class knows what technology is. Explain that a technology includes not just tools but the way tools are used and made. It has to do with what people know and how they use it to make or do things. Technology has to do with the way people think. Ask: "Are the subjects you study in class tools? What will you use these tools for? Is arithmetic a tool? Why do you have to know arithmetic?" Tell the class that an advanced technology requires people to be able to recognize and solve difficult problems. Instruct the pupils to think about the Tasadays again. Tell them that the Tasadays slept on the ground before the hunter came. The ground must have been damp because all caves are damp inside. Ask: "Did the Tasadays solve this simple problem by themselves? Perhaps it did not occur to them to do anything about it. What did the Tasadays later learn to do to sleep more comfortably?" (build wooden platforms)

Have the class look at a map of Africa and find Tanzania (tan' zə nē' ə) and Kenya (ken' yə). Next, have them read page 30. Help the pupils read the diagram. Have them start at the bottom level and read up, explaining what the land was like at each level. Ask: "Is there any level that shows a great change from the one before it? Why is Olduvai (ōl' də wā) Gorge called an archaeological stepladder?"

AN ARCHAEOLOGICAL STEPLADDER

One place in the world has given us more information about early man than any other. This place is East Africa.

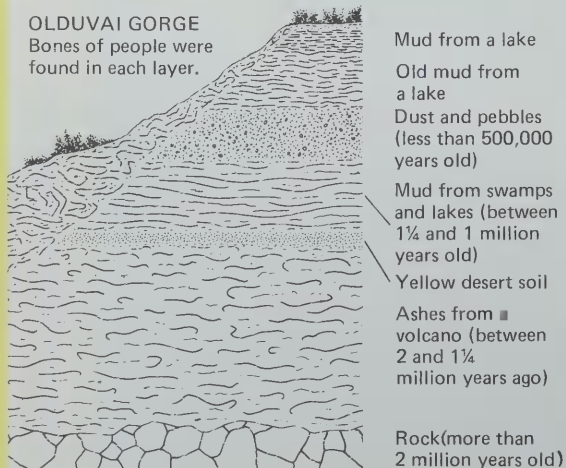
Olduvai Gorge is in Tanzania, which is a country in eastern Africa.

Dr. Louis Leakey and Mary, his wife, spent many years hunting for fossils. They wanted clues about the way early man lived at Olduvai Gorge. They were very successful because Olduvai Gorge is a special place.

Olduvai Gorge is really nothing more than a very big crack in the earth. In fact, that is what a gorge is. But if you look at the walls of the gorge, you will see different layers of rock. Each layer is from a different time in the earth's history. Each layer tells a story about what the earth was like at that time.

The bottom layer of Olduvai Gorge is more than 2 million years old. Toward the top, the layers are newer.

The Leakeys found bones and tools of people in all the layers. What does that tell you about human beings?



The Oldest Human Skull

Dr. Richard Leakey is also an anthropologist. He is the son of Louis and Mary Leakey. In 1972, he found a human skull in Kenya, East Africa, that is 2.6 million years old.

Scientists keep finding that people are older than they thought. Now many scientists think that there may have been people on earth even earlier than 2.6 million years ago!

Inventions A long time passed between the time of the earliest people and the time of farming. Meanwhile people made many other important discoveries and inventions.

People learned how to use animals to carry heavy loads. They invented the wheel. The wheel helped them to move things.

People developed languages that helped them communicate with others. Later, they invented writing.

In short, over the millions of years, people began to learn how to control their environment. They created new tools to help them. The tools were not just physical things like axes and wheels. The tools included ideas like farming and language.

Technology All of man's tool-using and tool-making ability is called his **technology**. Technology helped people to survive. It helped them to live in different environments. Throughout this book, you will be studying people and how they have used their technology to live in different environments.

◆ tek nol' ə jē

1. What is a tool? What kinds of tools did early people use? Name at least three different kinds of early tools.

2. What was the agricultural revolution? Why was it so important? How did farming change people's lives?

3. What animals did early people tame? Why do you think people tamed animals? Do we use these same animals for food and clothing today?

4. What is technology? Does the country in which you live have an advanced technology?

Activity

Bring a handful of beans to class before you get to the end of this unit. Put the beans in a bowl of water and have the class observe them from time to time. When the beans begin to sprout, ask the pupils to write down any thoughts or feelings they had while they were watching the beans. Discuss their responses in class. Next, have the class become the "first farmers." Have them decide how to plant the beans. They should not seek advice. If the plants grow, tell the pupils to write a few sentences describing what, if anything, they would do differently the next time.

Answers (p. 31)

1. A tool is any object or idea that helps people to do something or to survive. Early people used stone, bone, and wooden tools. They used choppers, scrapers, blades, and digging sticks. Other early tools are language and farming.

2. The agricultural revolution was the change from food-gathering to food-producing. It was all the changes that came with people's learning to farm and live in villages. It meant that people had enough food to eat. It even meant a surplus of food. This gave people the freedom to invent and discover things and to specialize. It meant a more comfortable way of life.

3. Early people tamed dogs, cattle, sheep, pigs, horses, and goats. They tamed them for food, protection, clothes, leather, and transportation. We use the same animals today.

4. Technology is all people's tool-making and tool-using ability. The United States has an advanced technology.

INVESTIGATING THE UNIT

Gathering Information

Find out more about life in the Stone Age. Use the encyclopedias and books in your school and public library. See if you can find out whether people of the Stone Age improved the tools they used. How did they improve them?

Today, new tools are invented everyday. That was not true during the Stone Age. Try and find out about how long early people used a tool before they found a way of improving it. Ask your parents if they remember when things did not change so quickly. Ask them why they think things suddenly began to change.

Grouping Information

Collect pictures from newspapers and magazines that show people doing things together. Separate the pictures you have gathered into groups. Which pictures show people doing the same kinds of things you think Stone Age people did? Which show people doing things Stone Age people could not have done? Why could they not have done the things shown in the pictures? Are there any pic-

tures you could not decide where to put? Explain why.

What Does the Map Tell You

Study the map of the Ice Age. Compare it with a map of the world today. Find the following cities:

New York (U.S.)	Houston (Texas)
Paris (France)	Peking (China)
Lima (Peru)	Cairo (Egypt)
Oslo (Norway)	New Delhi (India)

Mark each city on the Ice Age map with a dot. Explain why you think each city was or was not covered with ice during the Ice Age.

Using What You Have Learned

Imagine Stone Age people living where you live. Draw a picture showing what their life was like. What kinds of shelter did they find? What kind of food did they eat? What did they use for clothes?

Comparing and Contrasting

Compare the picture you have drawn with your life today. Does the picture give you any clues about why people improved their technology? Compare your answers with the reasons given in the text.

UNIT 2

READING LESSON: COMPREHENSION— USING CONTEXT CLUES (DEFINITION)

Purpose

As pupils continue to pursue social studies, they will be introduced to many new terms. Pupils should learn to look for a definition or explanation of the term immediately after it is introduced, either in the margin of the page or in the sentences that follow the word.

Introduction

Say: "It's fun to learn new words! In this chapter we meet for the first time some of the mysterious and marvelous words connected with Egypt. Have you ever heard of a sphinx or a pharaoh? Have you ever seen a movie about Egypt? Perhaps you watched the Egyptians build the pyramids, or sing before the Nile River. You will now see these words in print; perhaps for the first time, you will find out exactly what they mean.

"In this unit many new words are introduced. Often the definition of the word is given immediately after it is introduced, in the margin or in the sentences that follow."

Development

Say: "Turn to page 35 and tell me where we can find the meanings of these three words: *fertile*, *civilization*, *nomad*."

fertile (margin)

civilization (margin)

nomad (phrase set off by dash)

Application

Say: "Here is a list of words introduced in this unit. First let's pronounce them.

oases (p. 37)	source of a river (p. 42)
irrigate (p. 40)	cataract (p. 43)
catch basin (p. 40)	delta (p. 43)
lock (p. 41)	pharaoh (p. 47)
shaduf (p. 41)	pyramid (p. 48)

"After each word, there is a page number. That means that the word is introduced on that page. It also means that there is some kind of a definition of the word on that page—either in the margin or hidden in the sentences around that word. Can you locate the definition? Can you tell in your own words what that word means? Try it!"

Discuss pupil findings and clarify concepts. Then have pupils fill in this exercise to show their understanding of these words. After this exercise is completed, pupils may wish to begin keeping a notebook or flash cards of new terms and their meanings.

1. (source) _____ The place where a river begins.
2. (shaduf) _____ A machine that lifts water from the ground.
3. (delta) _____ A low, wide plain watered by a river.
4. (oasis) _____ A fertile area in a desert.
5. (irrigate) _____ To bring water to the land.
6. (catch basin) _____ A place to store water.
7. (lock) _____ A side of a catch basin which opens and lets the water out.
8. (pyramid) _____ The tomb of the pharaoh.
9. (cataract) _____ A stretch of fast-moving water in a river.
10. (pharaoh) _____ The most powerful man in ancient Egypt.

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and the Sphinx. Ill. Beatrice Loewenstein. N.Y.: Macmillan. Elizabeth Coatsworth's remembrance of her trip to Egypt in 1898 as a little girl.

READING LESSON PLANS

EGYPT: LAND OF THE NILE

They tremble, that behold the Nile in full flood.
The fields laugh and the river-banks are overflowed. . . .
The face of man is bright. . . .

Knowledge Objectives

Knowing that about 10,000 years ago, climatic changes made the Nile the only large source of water in North Africa.

Understanding how and why the ancient Egyptians learned to harness the Nile.

Understanding that ancient Egypt developed a highly organized government headed by an absolute monarch.

Knowing that the ancient Egyptians developed massive stone architecture and one of the earliest forms of writing.

Understanding that modern Egypt also depends on the Nile.

Value Objectives

Appreciating the inventiveness and industriousness of the early Egyptians.

Appreciating the ability of the ancient Egyptians to cooperate with one another.

Appreciating the achievements that made ancient Egyptian civilization possible.

Skills

Using maps and pictures to obtain information.

Evaluating the contributions to civilization made by a highly advanced culture.

Comparing and contrasting an ancient culture with its modern counterpart.

Making hypotheses based on available evidence about the way of life of a people of the distant past.



LESSON 1 (pp. 34–38)

Lesson Objectives: Knowing that about 10,000 years ago climatic changes dried Northern Africa, so that the Nile became the only large source of water in the area.

Lesson Skills: reading maps, observing, analyzing information, “reading” pictures

Introduction

One way to introduce a people is to play the game of “Who Are We?” Tell the class that you are going to describe an ancient people. They should try to guess who you are referring to. Tell the class: “We are a religious people. We believe that the gods made the world for us. Therefore it does not need to change. We are a happy people. We enjoy our lives and fill them with laughter and humor. We delight in the birds, flowers, and fish in and along our Great River. We are proud of the beautiful things we have made. We are not afraid to die because we believe that life continues after death. Then, the good life so many of us enjoy will continue forever. Our civilization is almost 3,000 years old. Who are we?” (ancient Egyptians)

Tell the pupils that the early settlers of the Nile Valley did not call their land Egypt. They called it the Two Lands or the Black Land. The name *Egypt* comes from *Aigyptos* (ā gip’ tōs), the Greek way of saying *Hikuptah* (hē küp’ tā). Some scientists think that *Hikuptah* was the name of the most important temple in Memphis, the first capital of ancient Egypt.

Ancient Egypt: An Early Civilization



Lesson Development

Inform the class that early civilizations grew up around four river valleys—the Tigris (ti' grās) and Euphrates (yū frat' ēz) in Mesopotamia (mes' ə pə tā' mē ə), the Nile in Egypt, the Indus Valley in what is now Pakistan, and the Yellow River Valley in China. Have the class find these rivers on a world map or globe. Explain that each of the four civilizations was different. Ask: "Does anyone know what a civilization is?" Explain that the word civilization comes from the Latin word *civilis*, meaning "citizen of a city." Ask: "Why do scholars think of civilizations as the advanced way of life of people who live in cities? Why do people live in cities? Is life in cities different from life in villages? Is it more complicated? Why did early cities grow up around rivers? Why were the ways of life that developed in cities along these four rivers different? What was different about each of the rivers? Did they all have the same kind of environment?"

Develop the concept of environment. Ask: "What is an environment? What parts of their environment do people use in order to survive? Tell the class that everything around them is part of their environment. Ask: "Are people part of the environment? What other things are part of the environment?" Make sure the pupils include all of the following in their responses:

Human environment: people—their minds, feelings, hands, and labor), the way they act individually and in groups, their languages, and their customs.

The Nile River flows through northeastern Africa. On both sides of the river lies a narrow valley. Very little rain falls in the Nile Valley. In fact, the region is surrounded by desert. But late each spring, the Nile rises and floods its banks. Then the valley is **fertile**.

Close to the banks of the Nile, the **civilization** of ancient Egypt was born almost 5,000 years ago. Look at the map of Africa on page 36. Find the Nile River. Find Egypt.

THE PEOPLE OF THE NILE VALLEY

The earliest people of the Nile Valley were nomads—wandering food-gatherers and hunters. Sometimes, they camped along the Nile and the Fayum. There, they fished, collected seeds, and sharpened their stone tools.

As time passed, the ancient Egyptians settled down. They learned to use the Nile to water their fields. They learned to use the plants, animals, and minerals around them. They developed a written language. They built huge buildings that amaze people today. They learned to make things out of metal, especially copper.

How did this civilization begin? How did it happen in Egypt where the climate is so dry? Scientists have looked for evidence.

As you read this unit, ask yourself these questions:

How did the early Egyptians get their food and shelter? Did they buy the things they needed, or did they make them? How were they affected by the land around them?

- ◆ Fertile (fər'tl) soil is soil in which crops grow well.
- ◆ Civilization (siv'l ə zā'shən) is the name given to the ways of living of a group of people.

◆ nō' madz

- ◆ The Fayum (fī ūm') is a lake on the west bank of the Nile. It is surrounded by marshy lowlands.

Natural environment:

the earth—rocks and minerals (including dirt and sand).

animals—how they are used for food, clothing, tools, and protection.

plants—how they are used for food, clothing, and tools.

water—how it is used for nourishment, power, and other things.

sky—how the stars, the sun, and the moon are used to tell direction and time.

climate—how the weather and elements (wind, snow, rain, and so on) affect people.

Ask: "Why are environments in different parts of the world not alike? Why are civilizations in different parts of the world not alike? What was the environment of ancient Egypt like?"

Tell the class that part of the environment—the geography and climate—of the Nile Valley is described on pages 36–38. Have the pupils read the rest of page 36 and page 37. Inform them that while these changes were taking place in northern Africa, the great ice sheets from the Ice Age were melting in Europe. The whole earth was warming up. Europeans were learning to live in a rainier, forested land. Ask: "What two great challenges of nature did the ancient Egyptians meet? What does the picture on the top of page 37 tell you? What places did the ancient Egyptians learn were best for building villages? Why? Why did people not build farther away from the river?"

Develop the idea that the ancient Egyptians were fairly isolated. Tell the pupils to look at a land map of Africa. Ask: "Where do most people in Egypt have to live? Why? Is the Nile Valley very wide? (4 to 20 miles) What kind of land is east and west of the Nile? What is to the north and

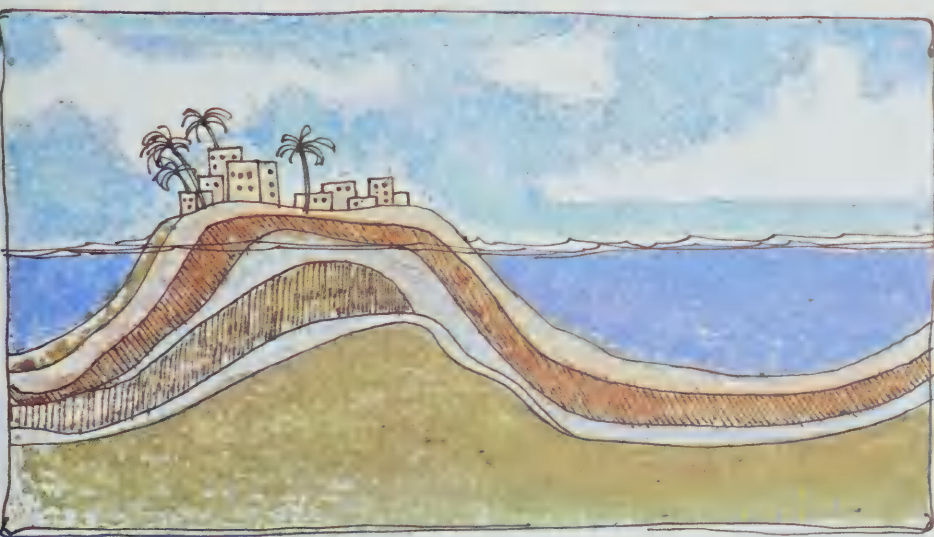
How were the ancient Egyptians governed? Would you like such a form of government?

What kinds of groups did the ancient Egyptians belong to? Do you belong to the same kinds of groups? Were some ancient Egyptians richer than others? We say that some people are upper class, middle class, or working class. Did the ancient Egyptians have classes too?

A CHANGING CLIMATE

Before the desert Thousands of years ago, the Nile Valley was wider than it is today. There were grasslands where there is now desert. Rainfall was heavier at that time. Groups of wild animals—such as hippopotamuses, lions, elephants, and giraffes—roamed the grasslands. Small bands of people hunted these animals.





The weather changes Around 8000 B.C., the weather slowly became warmer. Rainfall over northern Africa lessened. The climate of the region became drier. The grasslands died. Animals and people were forced to move elsewhere to find food. They moved to the coast, to the south, to oases, or to river valleys. Desert closed in on the Nile, surrounding the people who lived there.

The region became what it is today—a hot, dry land with little rainfall. Many people came to the Nile Valley because the river was there.

A new way of life Towards the end of every spring, the Nile flooded. Perhaps the people were frightened as water covered the land. When the flood waters went down, perhaps people began to notice that the flood waters left rich black soil on the land. Perhaps they

◆ An oasis (ō ā'sis) is a fertile area in the desert.

◆ Look again at the map of Egypt. Describe the boundaries of the country.

south?" Make sure the pupils understand what deserts and oases are. Help them find information in the library about the Sahara desert and other deserts in the area. Ask: "Does Egypt have many oases? Can large cities grow up around oases? Is it easy to travel to and from oasis cities? Do you think many people traveled to ancient Egypt? Why not? Were the ancient Egyptians free to develop their way of life with little outside interference—that is, without fear of being invaded by other people all the time?"

Instruct the children to read the section which begins at the bottom of page 37. Prepare for this section beforehand by bringing in pictures of predynastic and Old Kingdom Egyptian art to class. The pictures should show the animals and vegetation of the valley. Tell the class that the early Egyptians themselves have told us what the environment of the Nile Valley was like in those early days. They drew pictures of the valley. They described it in their writings. Have the pupils look at the pictures you brought into class. Ask: "How did the ancient Egyptians describe their valley? What animals do you see? What plants grew in the valley then?" Help the pupils to identify the animals and to discover that even in recorded history, the Nile Valley was a jungle teeming with wildlife. Make sure the pupils understand that when northern Africa dried up, the soil around the Nile was still enriched by annual deposits of dirt from the highlands. This dirt was carried down by the river and added to the soil when the river flooded in the late spring. Ask: "Can you better understand now why the ancient Egyptians called their country the Black Land? Explain."

Activity

Have the pupils think up a name for their region which would describe its most important geographical feature. Tell them to write a composition on how this feature affects their life. If it does not, tell them to explain why.

LESSON 2 (pp. 38–44)

Lesson Objectives: Understanding that the ancient Egyptians learned to control the Nile and its valley. Appreciating the inventiveness of the early Egyptians.

Lesson Skills: comparing and contrasting, interpreting pictures and maps, inferring

Introduction

Tell the pupils to imagine they are marooned on an island in the middle of the ocean. They have nothing with them except for a bagful of grain. In the center of the island is a tall mountain, from which a raging river flows to the ocean. This river is the only source of drinking water because rain never falls on the island. There are no lakes or streams. The river is surrounded by jungle, inhabited only by a few species of birds. Ask: "What would you do to survive? Where would you plant grain? What would you use to cut down the jungle? How would you water the plants? Would you try to find better ways of watering your crops?"

Lesson Development

Explain that the people of ancient Egypt were in a situation somewhat like the one that the class has just imagined, except that the Egyptians were surrounded by desert instead of by ocean. Have the class

◆ A hymn (him) is a song of praise.

◆ What does this hymn tell you about the importance of the Nile to the ancient Egyptians?

also noticed that plants grew in the fertile soil.

How do you think the early Egyptians put this knowledge to use? How do you think they made their environment work for them? What way of life do you think the early Egyptians turned to?

USING THE NILE

The early Egyptians struggled to understand the Nile, for it was the only source of water the people could count on. The river was so important to the early Egyptians that they worshiped it. The following poem is part of an ancient Egyptian hymn to the Nile.

Praise to thee, O Nile, that comes to feed
Egypt. . . .

That waters the meadows and feeds all cattle.
That gives drink to the desert places,
which are far from water; . . .

Lord of fish, . . .

That makes barley and creates wheat.

If he [The Nile] does not overflow his banks, all
men become poor; . . . and millions of men
die. . . .

When he rises, the land is full of joy.

He that brings food, that creates everything
good.

That fills the storehouses and . . . gives
food to the poor.

Clearing the land It took the Egyptians centuries to turn the land along the Nile into farmland. They had to drain the swamps. They had to clear away the thick plants that grew



Many Egyptian farms today look like those of centuries ago. They grow many of the same crops—fruit, melons, wheat, and barley. We know this from paintings such as the one above. It shows the fields of Sennejem, a wealthy man of ancient Egypt.

read the middle section on page 38. Ask: "In what ways does the poem say the early Egyptians depended on the Nile? Why is the flooding of the Nile so important? Why does the hymn say that the Nile feeds Egypt? Why does it give drink to desert places?" Have the class read the section on clearing the land, on pages 38 and 40. Ask: "Why did it take centuries to clear the land?" Explain that the early Egyptians who began clearing the Nile were Stone Age people. Ask: "What does *Stone Age* mean? What kind of tools did these early Egyptians use? Would it take a long time to do things with stone, bone, and wooden tools? Did the Egyptians clear their land more quickly after they learned to make metal tools? Why?"

Have the class look at the pictures on page 39. Ask: "Were the ancient Egyptians successful in clearing their land and planting crops? Are the men and women in the top picture doing the same work? How are they working together? Can you see how the Egyptians watered their fields? Describe the appearance of the ancient Egyptians." Have the pupils compare the two pictures. Ask: "Are the trees in the two pictures the same? Are the crops near the water in both pictures? Are the animals in the pictures similar?"

Tell the class that the top picture shows something else also. It shows how the Egyptians made their environment part of their religion. The reason why this painting was put in the tomb of Sennejem was to tell the gods about Sennejem and to explain how he cared for his land, and why he should be given it back in the afterlife. The painting is addressed to the gods. At the top of the picture is Re (rā), the sun god—one of the most important gods of Egypt. He is sitting in his sun boat, which he uses to cross the sky every day. On Re's knee is the *ankh* (angk), the symbol of life and of Hapi (hä' pē), god of the Nile. In front of Re on the boat is the symbol of the soul. The section underneath (second from the top), shows Sennejem going to the underworld to be judged. Re is sitting in front of the barge, and behind him is Osiris (ō sī' ris), who can be recognized by his distinctive crown. Osiris was the god of the dead and of vegetation and the earth—he was a symbol of death and rebirth. Ask: "Can you tell anything about the ancient Egyptians from this picture? Why would the symbol of Hapi also be used as a symbol of life? How did the ancient Egyptians explain their environment in their religion?"

Instruct the class to read the rest of page 40 and page 41. Ask: "Did the ancient Egyptians learn to control their environment? Did they learn to plan ahead?"

Have the pupils look at the picture on page 40. Ask: "What animals are shown in the picture? What are the workers doing with them? Do you think the laborers are employed by someone else, or are they working for themselves? Who do you think the people sitting on the side are?" (probably overseers) Explain



Scientists found these small figures in a tomb in Egypt. What do they show about Egyptian life? How did people farm? dress? wear their hair?

on the river's banks. They had to dig ditches to carry water from the river to the fields.

As the Egyptians cleared more land for farming, they were able to grow more food. Soon they had a surplus, or extra food.

Watering the fields As you have read, every spring the Nile River flooded its banks. When the flood waters withdrew, some water was left in pools and holes. The early Egyptians used this leftover floodwater to **irrigate** their fields.

To store the water, they dug large holes in the earth. These holes were called catch basins.

◆ To irrigate (ir'ə gāt) means to bring water to the land.

Then canals were dug from the catch basins to the fields. When the fields needed water, the Egyptian farmers opened up a side, or lock, in the catch basins. The water then flowed through the canals to the fields. When the catch basins were empty, the farmers refilled them with water from the Nile.

To make their work easier, the Egyptians invented a simple machine called the *shaduf*. The *shaduf* was a bucket hung from a long pole. The pole was attached to the top of a post or a tree. At the other end of the pole was a heavy stone or clump of earth. The stone was heavier than the bucket of water. When the bucket was lowered into the water, the stone would sink to the ground. This would raise the full bucket.



◆ shā düf'

Egyptian farmers still depend on the Nile. As of old, they use the river to water their fields. What is the farmer shown here doing? What ancient invention is he using?

that overseers and scribes kept count of everything that the nobles, the temples, and the wealthy people owned and all the work that people on the estates did. Ask: "Do people keep count of what they own and make today? of the amount of time people work? Why?"

After the class finishes reading page 41, ask: "What does *irrigate* mean? How did the ancient Egyptians irrigate their lands? Do farmers in your country water their fields? Do people water their yards? Why? How do they water them? Is there more than one way to water land?" Help the class find out about different methods of irrigation from an encyclopedia. Ask: "Do you think the ancient Egyptians ever reached the point where they had to stop cultivating new land because they would not have enough water for the extra crops? How could this happen?"

Have the class read pages 42 and 43. Tell the pupils to find the area shown on page 42 on a land map of Africa. Have them trace the Nile and its branches from their sources to the Mediterranean Sea. Ask: "Why was there not more boat travel between the first and sixth cataracts?" Make sure the pupils know what a cataract is. Ask: "Why are the last 600 miles or so of the Nile River different from the rest of the river?" Have the class explain in their own words why the Nile floods every year. The discovery of the source of the Nile is one of the most exciting stories of modern exploration. Have a few volunteers go to the library and find out about the Nile and its exploration by John Hanning Speke, Sir Samuel Baker, and Henry Morton Stanley from the middle to the late nineteenth century.

Have the class look up the lengths of other rivers of the world, especially the Amazon (3,900 miles), the Mississippi (2,348 miles), the Congo (2,718 miles), and the Yangtze (3,100 miles). Have the class look at a world map and compare the Nile with the other rivers. (Elicit the fact, for instance, that the Amazon has innumerable tributaries.)

Tell the pupils to look at the land map of Egypt again. Have them look closely at the Nile Valley. Tell them to compare the land of the delta with that of Upper Egypt. Ask: "How are the lands different? Is Upper Egypt hemmed in more by high land? Is there any high land in the delta region?" Tell the class to think back to what you told them at the beginning of this unit. You told them that the ancient Egyptians called their land by two names. The Black Land is one name. Ask: "What was the other name? Why did the ancient Egyptians call their country the Two Lands? Is the geography of these areas different? Do you think the people of the delta traded with other lands? Do you think there were more traders in the delta region than in the rest of Egypt? Why?"

Ask: "Is the word *delta* used as a symbol for things? (A symbol is something that stands for something else.) What is it a symbol of?" Have the class look at a land map of the United States. Ask: "Does the United States have any rivers with deltas? Does it have any large areas of fertile land surrounded by desert? Is the geography of the United States very different from the geography of Egypt? Explain the differences."

THE NILE

The Nile is the longest river in the world. It is over 4,000 miles long. Egypt lies along the last 600 or so miles of the river.

The source of the Nile Every river begins somewhere. The place where it begins, or rises, is called its source. Do you know the sources of the rivers where you live?

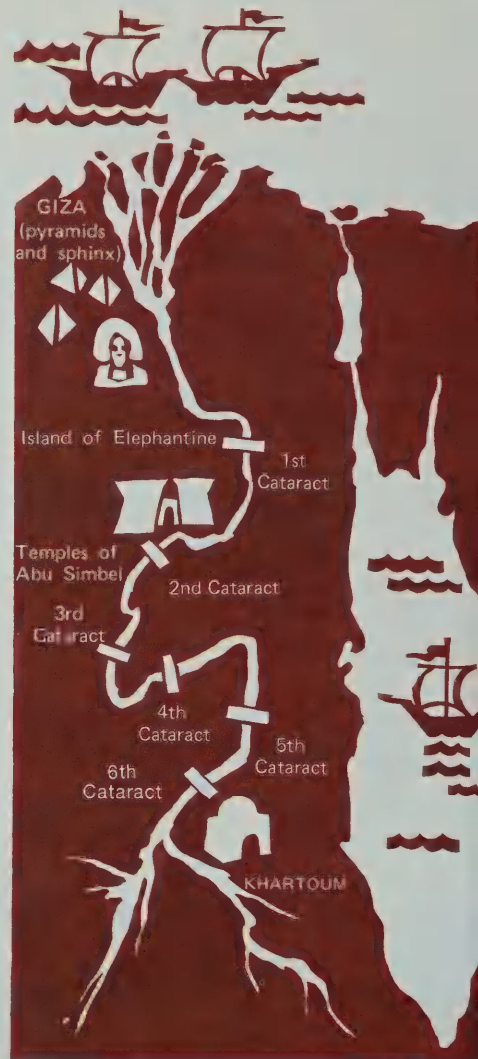
The Nile rises in Lake Victoria, in east central Africa. From there, the Nile flows north through the desert. Find Lake Victoria on the map on page 36. Where does the Nile empty?

The White Nile and the Blue Nile

The Nile has two parts. The part that stretches from Lake Victoria to the city of Khartoum (kärtüm') is called the White Nile.

The Blue Nile starts at the highlands south of Lake Tana in Ethiopia. The two rivers meet at Khartoum. Find the Ethiopian Highlands and Lake Tana.

In May and June, heavy rains fall in east central Africa. They cause the water level of the river to rise.



Melting snow from the highlands around Lake Tana adds even more water. And the water carries with it fresh soil from the mountainsides. It is the water from the Blue Nile that causes the Nile River to flood.



Instruct the class to read page 44. Make sure the class knows what threshing is. Ask: "What animals besides cattle did the ancient Egyptians domesticate?" Compare the picture on page 44 with the one on page 39. Have the pupils describe exactly what the Egyptians are doing in the pictures. Ask: "What farm tools did the ancient Egyptians use? Which of these tools would not be used by nomads?" Have the pupils describe what the pictures show about the ancient Egyptian methods of farming. Ask: "Do people in your country farm that way today? How is most grain in your country cut and gathered? Do you think these machines would help the modern Egyptians to grow more crops?" Help the pupils find out how many crops a year are grown in your area. Ask: "Why could the ancient Egyptians grow as many as three crops a year? (They had a long growing season. Even though there was a flood season, the rest of the year was very warm.) When do farmers in your state plant their crops? When do they harvest them? Can they plant a second, and even a third, crop?"

The delta Next, the Nile spreads over a low, wide plain. Since the plain is near the sea, it is very low. The plain is a hot and humid area. This lowland region watered by the river is called a delta. The ancient Greeks named such an area a delta because it looked like their letter "delta." A delta looks like this: Δ .

The ancient Egyptians called the delta Lower Egypt because it was downstream. The Nile Valley to the south was called Upper Egypt. Why? Why would the people of Upper Egypt have been more isolated than the people of Lower Egypt?

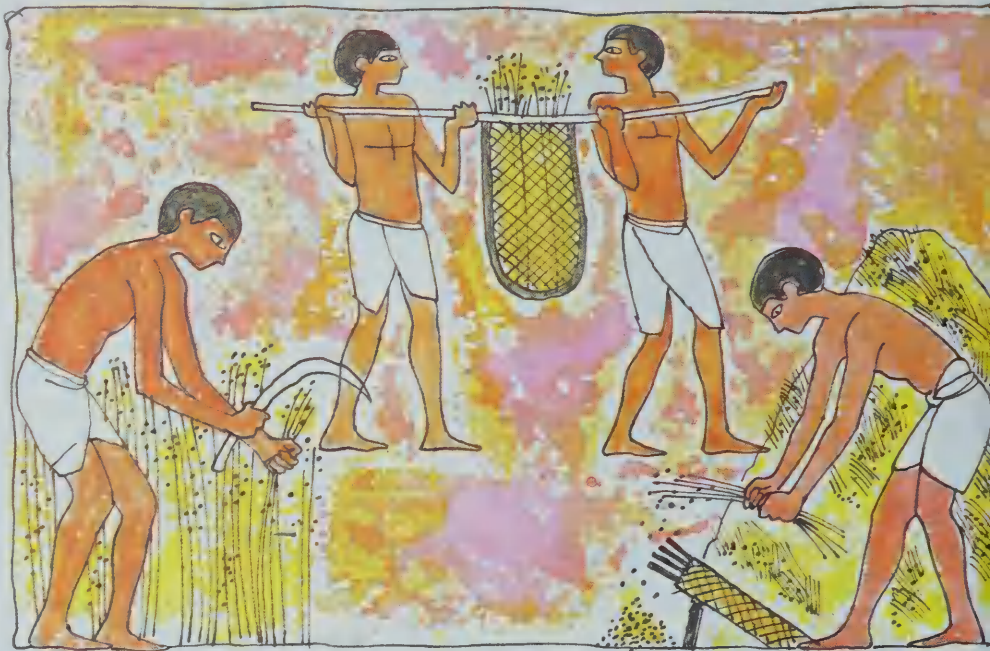
Cataracts After the Blue Nile and the White Nile join, the river flows over six cataracts. A cataract is a stretch of rough, fast-moving water, falling from higher to lower levels. Its roughness is caused by the rocky ridges over which the water falls and breaks. After it leaves the cataract area, the river flows calmly north. Can boats travel over cataracts? What did having cataracts to the south of them mean to the ancient Egyptians?

Activities

1. Have the class draw a decorative map of the Nile. Tell them to include everything they have learned about the Nile from its sources to its delta. Using symbols or pictures, show all special vegetation, such as reeds, or papyrus; any special animal life, such as crocodiles in the delta; and any special hazards, such as falls, cataracts, marshes, and hostile tribes.

2. Have the class look up information about the Mississippi River in an encyclopedia. Tell the pupils to write a song praising the importance of the river during the early history of the United States.

3. Have the class draw a picture like the one on page 44, showing wheat growing and being harvested in the United States today.



Planting crops Around October, the Nile dropped back to its usual level. This was the time for Egyptian farmers to plant their crops. The fields were often very muddy.

Before the farmers planted their seeds, they broke up the soil with a wooden plow pulled by a team of cattle. Sometimes herders, or shepherd herds, drove pigs or sheep into the fields to break up the soil even more. Then the farmers lightly raked the land and planted the seeds.

The crops were usually picked, or harvested, around February. A second crop was then planted and sometimes even a third. Next, the grain was threshed. This separated the seed from the rest of the plant. Then the grain was stored in silos or granaries.

◆ A silo (sī' lō) is a building that holds food for livestock.

THE BIBLICAL STORY OF JOSEPH



Sometimes, the Nile would not rise high enough for several years in a row. The story of Joseph in the Bible describes what happened to Egypt at such times.

Pharaoh said to Joseph, "I dreamed I was standing on the bank of the Nile when seven cows, fat and smooth, came out of the Nile and were grazing in the . . . grass. After them, seven other cows came up, lean, very ugly and skinny. . . . The skinny, ugly cows ate the first seven fat cows. . . . Then I awoke. Again I dreamed I saw seven ears of grain, full and fine, growing on a single stalk. After them sprouted seven dry, thin ears. . . . The thin ears swallowed up the seven fine ears. . . . No one could explain it to me."

Joseph said to Pharaoh: ". . . The seven fine cows are seven years, and the seven fine ears are seven years; it is but one dream. The seven thin, ugly cows which came up after them are seven years; and the seven empty ears . . . are seven years. . . . Seven

years of great plenty will come through the land of Egypt, but there will follow seven years of famine, and then all the plenty will be forgotten in the land of Egypt. . . . Let Pharaoh name officials over the land, and prepare the land of Egypt through the seven years of plenty. And let them collect all the food of these good years. . . . The food shall be . . . for the land when the seven years of famine shall come. . . ."

The advice pleased Pharaoh. Pharaoh said to Joseph, ". . . 'You shall be in charge of my palace and all my people shall obey your commands; . . . I give you charge of the whole land of Egypt. . . .'"

During the seven years of plenty the land produced more than enough crops. So Joseph collected all the food of the seven years of plenty in the land of Egypt, and stored it. . . .

When the seven years of plenty in the land of Egypt had passed, the seven years of famine began, as Joseph had foretold. There was famine in all other countries, while in all Egypt there was food.

What can the Bible tell us about ancient peoples? Could this story from the Bible have been based on history? Do you think historians compare information in the Bible with other evidence?

Lesson Objectives: Understanding that the ancient Egyptians learned the importance of organization and co-operation while taming the Nile Valley. Knowing that the early Egyptians formed one of the ancient world's most highly organized systems of government.

Lesson Skills: inferring, interpreting evidence, comparing and contrasting, "reading" pictures

Introduction

Tell the class to remember the discussion they had about being marooned on an island with a bagful of grain. Ask: "Do you remember what you did to survive? Suppose that you discovered a friendly tribe living on the mountain. Suppose they asked you to share your food with them. What would you do? Would it be wise to give them your food? Would it be better if you taught them how to raise their own food? Would the best thing be to organize people so that you could help one another survive without working so hard?"

Lesson Development

Instruct the class to read page 45. Ask: "Does anyone know who Joseph was?" Tell the pupils that Joseph and his family lived in the land of Canaan (kā' nən). His brothers were jealous of him and sold him to some traders going to Egypt. When the traders reached Egypt, they sold Joseph to the chief steward of the pharaoh. Help the class find the land of Canaan on a historical map of the Middle East. Ask: "Was Joseph carried very far from his home? What does this story tell you about Egyptian trade? What

does it tell you about the treatment of slaves in Egypt at this time? What does the Bible tell you happened to the Nile seven years in a row? How did the Egyptians prepare for bad years? Why did Egypt have a famine? (Famine is a time when there is not enough food. Many people are forced to starve.) Why did other countries not prepare as Egypt did? Did ancient Egypt have good leaders? Did its leaders know the importance of putting good people in charge of things?"

Instruct the class to read page 46. Ask: "What is a province?" Tell the pupils that the Egyptian provinces were a little like the states in the United States. Ask: "What is a kingdom?" Tell the class that it is a territory governed by a ruler called a king. When the king dies, leadership is passed on to someone in the same family, usually the oldest son of the king. Ask: "Where was the kingdom of Upper Egypt? of Lower Egypt? How is a kingdom different from the kind of government in our country? Who rules our country? How long does a leader rule in the United States? What happens if he dies while holding office?"

Tell the class that Upper and Lower Egypt were united around 3100 B.C., or about 5,000 years ago. Ask: "Do you think there were many people in Egypt at the time it was united? How did Egypt come to have so many people? Do you need someone to keep order when there are many people living close together? Do you think provinces or kingdoms need more people to keep order than do groups of hunters and gatherers? Why? Is your country united? Is it important that it is united? What would happen if each state went its own way?"

Tell the class to read page



The carving on this throne shows the pharaoh dressing for an important event.

◆ A clan (klan) is a group of people who believe that they are descended from a common ancestor. A tribe (trib) is a group of people with a common territory, customs, and language. A tribe may have several clans.

■ What important event in the history of your country is celebrated every year? Why was this event important?

LIVING UNDER ONE GOVERNMENT

The earliest Egyptians lived in villages along the Nile. These villages belonged to different **clans** and **tribes**. They were ruled by chiefs or kings.

In time, tribes began to join each other. They formed provinces. The provinces joined into kingdoms. Kingdoms conquered other kingdoms until there were only two left—Upper Egypt and Lower Egypt. Finally, Egypt was united into one country.

The union of Upper and Lower Egypt was a very important event in Egypt's history. It was so important that the Egyptians continued to celebrate it for centuries after it happened.

Why do you think the union of Upper and Lower Egypt was so important to Egypt's history? What kinds of things can one powerful government do that small tribes and provinces cannot do?

Working together to control the Nile The Egyptians built dikes to protect their villages from the flooding Nile. They built canals to bring water to their fields. To do this work, they needed organization and cooperation.

Peasants had to be willing to work a certain number of days each year. They had to dig new canals and fix old ones. They also had to replace boundary stones that had been swept away by the floods.

Other levels of workers and managers were needed. Someone had to decide where new canals should be built. Someone else had to direct the building. Each manager was responsible for the workers below him. At the top of the ladder was the pharaoh—the most powerful man in all Egypt.

Pharaoh The Egyptians believed that their pharaoh was a god. They believed that his goodness caused the Nile to flood every year.

In fact, the Egyptian pharaoh owned and controlled all of Egypt. He directed flood control and irrigation. His word was law, and everyone in Egypt obeyed him.

PREPARING FOR LIFE AFTER DEATH

The ancient Egyptians believed that they would live forever—even after death. Therefore, they did not fear death.

Instead, the Egyptians spent much time and energy preparing for death. They built tombs with great care so that the bodies buried in them would be comfortable in the afterlife.



The pharaoh's headdress is a symbol of his power. The animals stand for Upper and Lower Egypt.

◆ The word *pharaoh* (fâr' ô) means great house.

► Who is the most powerful person in your country? What is he responsible for?

47. Ask: "How did the ancient Egyptians learn that working together helped each one of them? Do you think that the canals ever went through more than one province? Did the ancient Egyptians need to make rules about who had charge of what part of a canal? Could governors who were enemies harm one another's provinces by damaging their canals? Did people have to learn that co-operation was often more important than personal likes and dislikes?"

Tell the class that the pharaoh stationed a runner at the first cataract of the Nile around the time it was expected to begin rising. Tell the class that the flood waters usually reached Egypt around June. Ask: "How did the ancient Egyptians know when it was time for the river to begin rising? Do you think they had invented a calendar?" Inform the pupils that the runner had to pass on this news of the rising water as swiftly as possible. Ask: "Did the pharaoh have to be obeyed immediately and completely? Could obeying orders promptly be a matter of life and death to the ancient Egyptians? Did they need a leader who was powerful?" Explain that the early Egyptians solved the problem of strong leadership by becoming the first people to believe their leader was a god.

Tell the class that Egyptian society was like a pyramid. The pharaoh was at the top. Under him were the nobles, priests, and high officials. Under them were the scribes. Craftsmen, supervisors, and merchants were in the next lower level and peasants were under them. Slaves formed the bottom of the pyramid. (Most slaves were prisoners of war, and there were not very many until a later period in ancient Egypt.)

Ask: "Why was it important for people to obey their officials and supervisors? Why is it important that you obey me? your parents? Why am I here? Suppose a policeman came into the classroom and started to give orders. Would you obey him? Is it important to know who has authority, when they have it, and when that authority ends?"

Inform the class that the policeman who came into the classroom would probably be a stranger. Ask: "Would you have to know that he is a policeman in order to obey him? How do you recognize a policeman? Is his uniform a symbol of authority? Does he have any other symbols of authority? Are symbols important ways of recognizing authority? Are they necessary?" Tell the class to look at the pictures on pages 34 and 47. Ask: "What symbols of authority do you see in the pictures?" Tell the class that the vulture on the left of the pharaoh's headdress on page 47 is the symbol of Upper Egypt. The serpent is a symbol of Lower Egypt. Both are symbols of the goddesses of the area who are supposed to protect the pharaoh. Ask: "Do you think the crook and flail that the pharaoh is holding are symbols of divinity too?" (Yes. They express care and discipline.)

Have the pupils look at the picture on page 46. Ask: "Do you think the pharaohs were wealthy? Did the ancient Egyptians use metal? Do you think they used metal for tools also?" Tell the class that the ancient Egyptians made tools of copper. Later, they combined tin and copper to make bronze. Help the class find out what copper and bronze are used for. Tell the pupils that the pharaoh owned all the mines of ancient Egypt. No one else could own any mines.

► A mummy (mə'm'ē) is a body that has been treated so that it will not decay.

► What kinds of things were buried in the tombs? Can you tell what the ancient Egyptians thought life after death would be like?

◆ pir' ə mid

► What do you think is the most important building in your country? Why do you think it is the most important building?

► What subject do you learn in school that the Egyptians also knew something about? Are numbers and measuring a kind of tool? Could your life be the same without numbers?

When an Egyptian died, his body was made into a mummy. The Egyptians believed that a person would need his body in the afterlife. Furniture, weapons, tools, and pieces of art were buried with a person in his tomb. Scenes of everyday life were painted on the walls of the tomb.

The pyramids The most time and effort were spent in preparing the tomb of the pharaoh. The tomb of the pharaoh was called a pyramid.

The pyramid was not only the tomb of the pharaoh. It was also his home in the afterlife. The Egyptians believed that once their pharaoh died, he became a god. Then, as a god, he aided people who were still living.

The Egyptians believed that the proper funeral ceremonies and the pyramid helped their pharaoh to become a god. They thought that he would rise to heaven through the pyramid. For the Egyptians, building a pyramid was an act of faith.

Building the pyramids Thousands of people were needed to build the pyramids. People worked in teams. They worked on the pyramids when there was not much for them to do. Can you guess which time of year this was?

The pyramids were built of stone blocks. Stone blocks are hard to cut evenly. But the Egyptians knew how to measure and how to add and subtract. They also knew how to use simple fractions, such as $\frac{1}{2}$, $\frac{1}{3}$, and $\frac{1}{4}$. With these methods, the Egyptians were able to cut stone at exact angles.

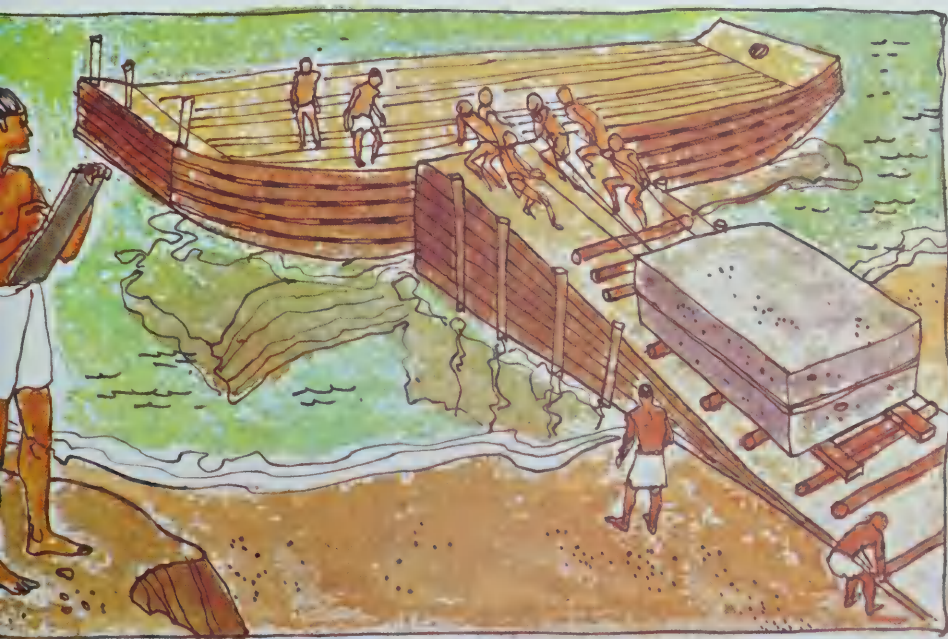
Using crowbars, the Egyptians put the stones onto sleds. Men or oxen pulled the sleds over logs. The logs acted as rollers. (Wheels were not used in ancient Egypt.) The sleds were pulled to large flat-bottomed boats. The boats brought the stones down the Nile to the place where the pyramid was being built.

In order to put the stones into place, the Egyptians used ramps. They also used a type of grease or oil to move the stones. When all the stones were in place, a limestone finish was put on. Then the ramps were taken away.

Pyramid cities When the pyramid was finished, temples were built next to it. Often, a sphinx would be built in front of the pyramid to protect it. A sphinx was a large statue with

◆ A crowbar is a bar made of iron. It is used to lift heavy objects.

◆ sfingks



Ask: "Did the ancient Egyptians use any other metals? How did they use gold? Did they decorate their personal belongings and themselves? Did the ancient Egyptians use their natural resources to show wealth? Did they use wealth to show personal worth and authority?" Have the class read the rest of page 47 and page 48. Ask: "Suppose people today believed they needed their bodies after death. Would people try to find ways to keep their bodies from decaying? Where would they put their bodies? Would the bodies of important people get special treatment?"

Ask: "Can buildings be symbols also? What is the White House? the Capitol building? What kind of symbol were the pyramids? Could you compare the pyramids to the great cathedrals of the Middle Ages? Help the class find out about the cathedrals—why they were built and who built them. Ask: "What was the purpose of building a cathedral? Why was building a pyramid, and thereby helping the pharaoh become a greater god in heaven, an act of faith?"

Ask: "How many pyramids are there? Why did cities grow up around the pyramids?" Tell the class that the ancient Egyptians believed the king sometimes returned to the pyramid and his body. Ask: "Why was it important for the pyramid to be kept in good condition?" The pyramids usually had temples built in front of them or nearby. Ask: "What do you think priests did in these temples? Do you think they asked the dead pharaoh for his help? Do we have cities of the dead today?"

Bring in pictures of pyramids to class. Tell the class that the three great pyramids at Giza (gē' zə) belong to the pharaohs Khufu (kū' fū), also called Cheops (kē' ops), Khephren (kef' ren), and Menkaure (men kou' rā), also called Mycerinus (mis e rī nus). All three pyramids were built in the early part of Egypt's history. Tell the class that ancient Egypt had many pharaohs. Ask: "Why are there not more pyramids?" Help the class find out about the different kinds of tombs in Egypt and why the bodies of the pharaohs and their families were later hidden in the cliffs of the Valley of the Kings near Thebes. Tell the class that everyone in Egypt was buried on the west bank—where the sun sets. The east bank was the city of the living. Ask: "On which bank do you think the pyramids were built?"

Ask: "What materials were used to build the pyramids?" Tell the pupils that the ancient Egyptians were the first people to build large buildings of stone. The Great Pyramid of Khufu at Giza, shown on page 50, took 100,000 men over 20 years to build. It has over 2 million blocks of stone, and each block weighs over two tons. Ask: "Did Egypt have lots of stone? Did it have many forests? (only of softwood trees) Why did the ancient Egyptians build their great monuments of stone?" Tell the class that the Egyptians used stone for other great buildings besides pyramids. Have the class look at the picture on the right of page 57. It shows just a few of the many columns of the temple at Karnak. (kār' nak) Tell the class to compare the size of the man in the picture with that of the column. Ask: "Are the columns very large? Would it take much skill and manpower to



The paws of the Great Sphinx at Giza stretch out towards the Nile. Most pyramids also face the river. Can you guess why the Egyptian holy statues faced the river? People worshiped these monuments. The Giza Pyramid was once over 480 feet high and seemed to reach heaven. People also feared the monuments. In Arabic, sphinx means "Father of Terrors." Can you guess why it was given that name?



The Metropolitan Museum of Art, Rogers Fund, and Gift of Edward S. Harkness, 1935.



the body of a lion and the head of a human. The human was usually a pharaoh or a god. Sometimes a temple was built between its paws.

Many priests and workers were needed for the pyramid and its temples. They were responsible for the pharaoh's funeral ceremonies, protecting the pyramid, and keeping the buildings in good condition.

LIFE IN ANCIENT EGYPT

Houses Most houses in ancient Egypt were built of mud, wood, and brick. The bricks were made from mud and straw baked together in the sun. The poor lived in mud huts. The wealthy had large houses in both the city and the suburbs.

The ancient Egyptians loved to decorate their homes with gay colors and with pictures of flowers and animals. The tile shown above was part of an Egyptian pool.

► What is your house or apartment built of?

move these huge pillars into place?" Tell the class that the ancient Egyptians were also the first people to use huge stone pillars and columns. Ask: "Were the ancient Egyptians great architects (builders)?" Tell the class to turn to page 63 and look at the pictures at the top of the page. Tell the pupils they show part of Abu Simbel (ä bü' sim' bäl), an ancient Egyptian temple built by Ramses (ram' sēz) the Great. Ask: "How else did the ancient Egyptians use stone? Do you think primitive Stone Age societies used stone in this way? Why not?" (Such massive building and carving in stone requires not only a more advanced technology, but considerable organization and cooperation.)

Activity

Have the pupils write and enact a skit showing a pharaoh giving orders for a new canal to be built and for the land around the canal to be formed. The skit should show the orders going from one level of workers to the next until they reach the peasants.

LESSON 4 (pp. 51-55)

Lesson Objectives: Knowing that ancient Egyptian civilization was based on its many arts and crafts.

Lesson Skills: comparing and contrasting, classifying, inferring

Introduction

Ask: "What have you learned about the ancient Egyptians so far? Do you know anything about what they did for amusement? What do you think of when you think of a city? (buildings, transportation, businesses and services, government, amusements) Did the ancient Egyptians have cities as we know them? Do you think that people who live in religious centers have many amusements? Do they need services and trade? Do they need means of transportation? Do they need some place to live?" Tell pupils that they have learned that the Egyptians knew how to control their environment, to develop a government, and to work together. To find out what this meant to the ordinary Egyptian, the class should read page 51.

Lesson Development

Ask: "Why did ordinary people and nobles not build their houses from stone? Do poor people and rich people live differently in our country? Why?" Do we know much about the life of ancient Egypt's poor? Why not? Do mud huts last as long as stone buildings? Do you think most of the poor people knew how to read and write?"

Tell the class to look at the picture on the top of page 51. Ask: "Who do you think made this tile? a rich man or a poor man? Does it show a love of beauty? How did the painter of the tile feel about what he was painting?"

Have the class read page 52. Ask: "What is a craft? Do you know any crafts?" Ask the pupils if anyone remembers what *Hikuptah* means. It was not only the main temple in Memphis, it was the temple of the god Ptah (p'tä), the creator and the patron of craftsmen. Ask: "Do you think

Although the ancient Egyptians had chairs, they often sat on mats and rugs. They did not eat together at a large table, as we do today. Look at the picture on this page. How are people in the picture being served? Where was the food placed?"

Crafts The Egyptians were skilled craftsmen. They made things out of copper, wood, ivory, gold, leather, bone, stone, and clay. They could cut gems and make fine jewelry. Even everyday objects were decorated with beautiful designs of animals, plants, and flowers.

The Egyptians also knew how to spin fiber into thread and how to weave thread into cloth. Cloth was both plain and dyed and was cut into many thicknesses.



Skilled craftsmen need special tools. Scientists call special tools and the learning needed to use them **technology**. Do you think these ancient people had technology?

Trade and transportation The ancient Egyptians traded with each other as well as with foreign countries. The routes of trade were bodies of water, especially the Nile River.

Small boats traveled constantly between Upper Egypt and Lower Egypt. This meant that the people of Upper and Lower Egypt could mingle with each other and learn each other's customs. Look at the map on page 36. Which body of water would boats traveling between Upper and Lower Egypt use? How do you think this body of water may have helped to unite Upper and Lower Egypt? What other bodies of water could they have used?

Wood, gold, silver, ivory, wheat, and small manufactured things—like pots and knives—came to Egypt from foreign countries. Look again at the map on page 36. What could the ancient Egyptians have used for trade routes? Which countries do you think Egypt may have traded with?

Medicine The ancient Egyptians tried to treat sickness in a scientific way. They examined a patient, decided what caused his illness, and then treated it. They were also skilled in surgery.

The following medical case was recorded by an ancient Egyptian scribe over 3,000 years ago.

◆ tek nol' ə jē

◆ A scribe (skrīb) was a person who copied records.

craftsmen were valued in the early part of ancient Egyptian history? Why? Where in the pyramid of society were craftsmen placed? Are craftsmen valued today in the United States? Why is it hard for people to earn a living today by making things with their hands? Can people compete with machines? Can machines make things faster, with fewer errors, and in much greater numbers than people?" Tell the class to look at the picture on page 52. Have the pupils list the crafts that are shown in the picture. You may wish to point out that the ancient Egyptians used cosmetics and wore wigs. Ask: "Do you know anyone who would spend many hours making a chair like the one on page 46? If you found someone who could make such a chair, would he or she charge you a lot to make it? Would you like to own such a chair? Who usually owns such chairs today?"

Tell the class that most Egyptians drank beer and wore clothing of linen. Help the pupils look in encyclopedias and find out how linen is made from flax. Ask: "How many different tools are used especially for making linen? Why did many ancient peoples become specialists in their crafts? Did it take years of practice to do well in such crafts?"

Ask: "Did all of the materials the Egyptians used come from Egypt?" Instruct the pupils to read page 53. Tell the class that gold came from Nubia (nū' bē ə) and the Sudan, copper from Sinai, and cedar wood from Lebanon. Have the class find these places on maps of northern Africa and the Middle East. Ask: "Did ancient Egypt need to trade?" Tell the class that during its early history, Egypt was satisfied with its own land

and goods. Later, Egyptians wanted more gold, copper, wood, and other goods. They fought to take control of the places these materials came from. The Egyptian empire expanded until it gained control of land south of the fourth cataract. On the northeast, the Egyptians controlled the Sinai Peninsula, Palestine, and part of Syria.

Ask: "How did the ancient Egyptians trade?" Tell the class to look at books showing ancient Egyptian art and find pictures showing Egyptian means of transportation. They should include boats (of both wood and papyrus), sedan chairs, donkeys, and camels. Chariots and horses were used only in later Egypt—for most of the time the ancient Egyptians did not have the wheel. The art of later Egypt shows the people the Egyptians traded with or accepted tribute from. Some of the best examples are from the tomb of Huy (hoi), Viceroy of Nubia during the Eighteenth Dynasty, and Deir el-Bahri (de' r el bär ē), temple of Queen Hatshepsut (hat shep' sūt) at Thebes (thēbz). Show pictures of these people to the class. Ask: "Are all the people in these pictures Egyptian? What do you think they were doing in Egypt?" Explain what an empire is—a country that controls other countries besides its own. Control is usually won by warfare.

Have the class read the section on medicine. Tell the class that certain temples specialized in the study of medicine. Ask: "Can you think of any reasons why the ancient Egyptians knew so much about the body and were skilled in surgery? Would people who spent so much time trying to keep the dead body from decaying and preparing for mummification know a lot about the body?"

■ Do you think the ancient Egyptians knew much about medicine? What proof can you find?

■ Which of these games do you play today?

How to Treat a Bad Wound Over the Eyebrow

If you examine a man who has a wound over his eyebrow that is open to the bone, you should . . . close the wound with stitches. . . .

After you have stitched up the wound, you should tie fresh meat to it the first day. If you should find that the stitching is loose, you should close it with two strips of plaster. Then you should treat the wound with grease and honey every day until the man is well.

Sports and recreation The poor people of ancient Egypt had little time for special recreation. When they went to the river for water, they swam or stopped to talk with friends.

Wealthy people had many different kinds of amusements. They hunted animals and birds with nets and spears. Some people trained animals for hunting or racing. Young men liked to wrestle and practice archery. Families went on picnics and sailed together on the Nile. They also went to feasts and enjoyed listening to music.

Young children had a free and easy time. They spent most of their time playing. They played hopscotch, ball, and other games.

Education Fathers taught their crafts or professions to their sons. Wealthy families sent their boys to school. There they were trained to become government officials and priests.

In school, children learned some of the same subjects children learn in school today. They



One way the ancient Egyptians enjoyed their free time was to play indoor games. Does the one shown here look like a game you play today?

Have the class read the section about sports on page 54. Ask: "Do people today spend most of their time working? What do many people do with their free time—the time when they are not working and sleeping?" Tell the class to make four lists. In one, have them list all the things their families do together. In the second, tell them to list the things their fathers do by themselves or with friends. List the things their mothers do by themselves or with friends in the third list. In the last one, the pupils should put what they themselves do with their free time. Ask: "Do you and your family spend your free time in much the same way as the ancient Egyptians? Do you do anything that they did not do? Did they do things that you do not do?"

Have the class read the section on education, on pages 54–55. Tell the pupils that girls were sometimes educated also. Both boys and girls had considerable freedom. Ask: "Did the ancient Egyptians learn in different ways? Were there different kinds of education for different people? Do we have several different kinds of education today? Does everyone go to school today in the United States? Does anyone today learn a skill or business from a father or other relative?" Tell the class that Egyptian schools were run by the temples and palaces. Ask: "Who runs our schools today? Are there any religious schools today?"

Activity

Tell the class to go to the library and look up books on ancient Egypt. Have them prepare a bulletin-board display on the tools of the ancient Egyptians and the things they made with them.

learned arithmetic. They learned to read and listened to stories. They also had to copy model letters. Often these letters were not real but were samples for use in the classroom.

Here is a sample letter copied by ancient Egyptian schoolboys.

To An Official

You live, are successful, and are in good health.
... Your life is long and you give good advice.
You see what is beautiful, and you hear what is pleasant. ...

You are the herdsman whom God has sent,
and you care for many people. You help those
who are miserable, ...

You live and your enemy falls; he who speaks
against you will be destroyed.

You have come before the Nine Gods and they
have judged you a good man.

LESSON 5 (pp. 56–58)

Lesson Objectives: Knowing that the ancient Egyptians developed one of the earliest forms of writing. Knowing that after lasting for more than 2,500 years, ancient Egypt fell to conquerors.

Lesson Skills: “reading” pictures, inferring, hypothesizing

Introduction

Ask a pupil to write the words *peace* and *love* on the chalkboard. Then ask another child to draw pictures on the chalkboard to show those things without using letters. Ask: “Are both pupils using symbols?”

Lesson Development

Tell the class to read pages 56 and 58. Ask: “What kind of writing did the ancient Egyptians have? Is it like your writing? Is it like the symbols you drew on the board? What do the letters of your alphabet stand for? (a sound) How did the ancient Egyptians write ‘to go’? How do you write it? Can you spell out many words even if you have never seen them before? Do you know who invented the alphabet you use?” Help the class find out who the Phoenicians were and what their writing looked like.

Tell the class to look at the drawing on page 56. Ask: “What letters do *Cleopatra* (klē’ ō pa’ trā) and *Ptolmis* (tol’ mis) have in common?” Instruct the pupils to look closely at the pictures on page 57. Ask: “Did the ancient Egyptians write in the same direction all the time? Are there any royal names shown on the page?” Tell the class that hieroglyphics carved on stone were used only for praising and telling about the pharaohs, their queens, and the gods. Ask: “Why do you think the

♦ hī ə r ə glif’ iks



♦ shām pōl yōn’

♦ An obelisk (ob’ ə lisk) is a tall four-sided pillar that thins to a point at the top.

Writing The ancient Egyptians did not write as we do today. They wrote in pictures. A picture could stand for a sound. For example, □ stood for the letter *P*. A picture could also stand for an idea or an action. For example, ○ stood for “sun”; two legs (Λ) meant “to go.”

This form of picture writing is called hieroglyphics. The word *hieroglyphics* comes from two Greek words—*hieros*, which means “sacred,” and *glyphein*, which means “to carve.”

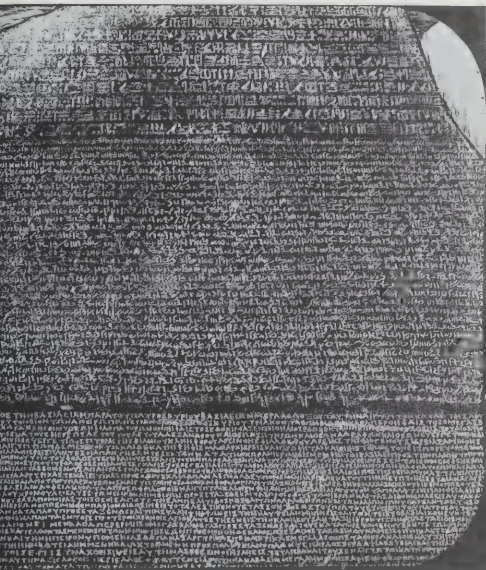
The ancient Egyptians used hieroglyphic writing for hundreds of years. But gradually they developed a form of script writing.

The Rosetta Stone The first clue to Egyptian writing was found in 1799 near Rosetta, a town in Egypt. It was a black stone with three types of writing on it. This stone is called the Rosetta Stone.

Scholars began work on translating the writing. They were able to recognize certain names. They also discovered that royal names had oval rings around them.

The Rosetta Stone was completely translated by a Frenchman named Jean Francois Champollion. He was helped by the discovery of an Egyptian obelisk in 1815. The obelisk had both Greek and hieroglyphic writing on it. Like the Rosetta Stone, it had the royal name Ptolmis written on it. The obelisk also had the name Cleopatra on it. Cleopatra has many of the same letters as Ptolmis.

Champollion compared these two names. Finally, Champollion was able to read the



The Rosetta Stone, above, has a message in three kinds of writing. Hieroglyphics is at the top; another form of Egyptian writing is in the center; and Greek is on the bottom. Additional samples of hieroglyphics are shown in the other pictures. The writings praise the pharaohs and are carved on temple columns and walls.



Greeks called the Egyptian form of writing hieroglyphics, or sacred carving?" Tell the class that the ancient Egyptians wrote on a paperlike material. It was made from papyrus—a reedlike plant that grew on the banks of the Nile. Ask: "In what ways is using papyrus more convenient than carving on clay blocks or stone?"

Tell the class to read page 58. Ask: "Do you remember how far the Egyptian empire extended into Asia?" Tell the pupils that while in Asia, the ancient Egyptians met a people called the Hittites (hit' its), who lived in what is now Turkey. The Hittites had something the Egyptians had little of—iron. Iron is harder than copper or bronze, and it is cheaper to make. Bronze weapons will not stand up against iron weapons. Tell the class that the Egyptians fought the Hittites, but they could not beat them. Finally the two peoples agreed to live in peace. Ask: "Can you think of any reason why power began to slip from Egypt?" Inform the pupils that copper was once thought of as a very valuable metal. Ask: "Can you guess why it was valuable? Do you think copper became less valuable after the discovery of iron? Would the copper stored in the palaces and temples of Egypt be worth less? Would people turn to gold as a means of exchange? Where would they find it?" Tell the class that this later part of Egyptian history was the time of the great grave robberies and the hiding of royal tombs.

Egypt kept weakening. Ask: "Do you think people began to doubt the power of their pharaoh when they saw him defeated in battle? Would officials obey him as promptly and loyally?" Eventually Egypt was invaded and conquered

by the Assyrians, the Babylonians, and later the Greeks. Find a map of the ancient Mediterranean and Near Eastern worlds and show the pupils where these people lived.

Activities

1. Tell the pupils to look up information about early writing in the library. Tell them to prepare a chart showing the hieroglyphic, Phoenician, Greek, and Latin alphabets. They need not show all the letters, just A, B, D, H, and T, for example. Compare the systems of writing in class.
2. Have the class prepare a bulletin-board display on the achievements of the ancient Egyptians. The class should include illustrated maps, pictures of buildings and statues, pictures of famous pharaohs of the time and of things the Egyptians invented.

Answers (p. 58)

1. The Nile was the only large source of water in North Africa. The rest of the area was desert. People needed water for growing food and for drinking. The river also provided an easy means of transportation.
2. A civilization is an advanced way of life. The early Egyptians had to cooperate in order to harness the Nile and to use it to better their way of life.
3. Ancient Egyptians believed that they would continue to live after death. They had to prepare well for the afterlife because it would last forever.
4. The pharaoh was the ruler of ancient Egypt. He was worshiped as a god.
5. A pyramid was the tomb of a pharaoh. All his favorite things and the objects he thought he needed in the next life were placed in the pyramid for him.

entire Rosetta Stone. In his whole life, Champollion never saw the Rosetta Stone. He worked from pictures.

AN ANCIENT CIVILIZATION DIES

In the narrow strip of land watered by the Nile, Egyptian civilization lasted for more than 2,500 years. During this time, ancient Egypt changed very little. The deserts kept foreign invaders out. But the deserts also kept the Egyptians apart from other peoples. It kept foreign ideas out, too. Therefore, Egyptian civilization grew on its own, with little influence from neighboring peoples. The ancient Egyptians developed a very fixed way of life. They depended on their pharaohs to keep this way of life unchanged.

In time, however, Egypt was conquered by a series of different people. The conquerors brought new ways and customs. But the Egyptians could not accept these new customs. The Egyptians clung fiercely to the past. In time, their way of life died.

Why do you think the ancient Egyptians could not adapt to a new way of life?

-
1. Why was the Nile so important to the early Egyptians? Why did the people depend upon the river for food? for transportation?
 2. What is a civilization? Why was it necessary for the early Egyptians to cooperate?
 3. Why did the ancient Egyptians spend a lot of time and wealth on preparations for death?
 4. What was a pharaoh?
 5. What is a pyramid? What kinds of things have been found in pyramids?

Lesson Objectives: Understanding that modern Egypt still depends on the Nile.

Lesson Skills: comparing and contrasting, reading maps, “reading” pictures, analyzing information

Egypt Today

Introduction

Bring as many pictures as you can find of modern Egypt in to class. Some should have shop signs or other examples of modern Egyptian writing in them. The purpose of the pictures is to show what modern Egypt looks like. Select ones that point out major differences between modern and ancient Egyptian civilization. Tell the class that modern Egypt is only about 25 years old. (Palestine was partitioned in 1947, and Egypt became a republic in 1953.) Elicit the idea that the Egypt of today is part of the Arab world. It is also part of the modern world, although there are many traces of old Egypt. Egyptian farmers, for example, still depend on the Nile and use old ways of drawing water from the river.

As the pupils look at the pictures you have selected, ask questions such as: “Do the modern and ancient Egyptians look the same? Does the writing you see look like hieroglyphics?” Tell the pupils that the Egyptians were conquered by the Arabs about 1,300 years ago. Tell the class to go to the library and find out who the Arabs are and what is special about their way of life. Continue to look at the pictures of modern Egypt. Ask: “Do Arab women dress like ancient Egyptian women? Do you think women had more freedom in ancient Egypt?” Have the pupils explain their answers.



Ask: "What is a mosque? Is it similar to the ancient Egyptian temples? What is the religion of the Arabs? Did the ancient Egyptians believe in Islam?" Tell the class that the Islamic religion does not allow people to paint pictures of gods or people. Ask: "Did the early Egyptians paint pictures of their gods? Why did Egypt become so much a part of the Arab world? Did it have a strong, living civilization at the time of the Arab conquest or had its civilization long been dead by this time?"

Lesson Development

Tell the class to read page 60. Ask: "Do modern Egyptians still need the Nile? What ancient Egyptian tools do people of the valley still use? Do modern farmers seem to live better than ancient Egyptian farmers?"

Ask: "Is modern Egypt still a mostly agricultural country?" Help the pupils find a map of Egypt's natural resources in an atlas. Ask: "What natural resources are listed on the map?" Next, have the class look in an encyclopedia to find out what Egypt's biggest industries and businesses are. They will find that Egypt grows cotton and rice and has a large textile industry. Ask: "Do the modern Egyptians wear cloth of the same material as the people of ancient Egypt?"

The class will also have found in the encyclopedia that Egypt has petroleum, but that it was only discovered a few years ago. Ask: "Does Egypt have many large industries? Can it offer people many modern jobs? Is Egypt learning new ways to use its land, its river, and its other natural resources?"

Tell the class that thousands of years ago, cities depended on surplus food, transportation, and a few specialists. Today,

In some ways, twentieth-century Egypt is like the Egypt of the past. Only a small part of modern Egypt is fertile land; most of the country is hot, dry desert. Almost all of Egypt's population lives on the small area of fertile land.

Farming Most modern Egyptians still make their living from farming or from industries related to farming. The poorest farmers live almost the same way poor farmers did centuries ago. They live in crowded, dirty villages along the Nile. Their homes are made of mud.

Poor farmers do not own the land they farm. They rent it from landlords. Some still use the ancient method of storing floodwater in basins to irrigate their fields. The *shaduf* is also still used in parts of modern Egypt.

The only life poor farmers know is one of endless work. They rarely see anything of life outside their own villages.

The Nile Egyptians still depend heavily upon the Nile. The river is an important route for trade and transportation. Thousands of boats use the Nile and its canals. They use the river to carry goods from one part of Egypt to another. They also use it as a highway of foreign trade.

Look at the map on page 62. What bodies of water could a boat reach by using the Nile and its canals?

But the Nile is not as important a trade route today as it was long ago. Roads and railways now connect the largest of Egypt's cities.



Both the old and the new are seen in many Egyptian cities. The top two pictures show different parts of Luxor. The picture on the bottom is of Cairo, the capital. It shows the modern city. In the background is the Citadel, a fort built by the Arabs 800 years ago.



cities need many other things—they need money, modern tools and technology, goods other countries want for trade, modern energy sources, and many kinds of specialists. These things will help the Egyptians put their land and resources to better use.

Help the class find out whether the Egyptians depend on the Nile for transportation today. Ask: "Does Egypt have any modern means of transportation?" Tell the pupils to look in encyclopedias and almanacs to find out how many miles of roads and railroads Egypt has and how many cars it has. (4,200 miles of railroads, 26,600 miles of roads, and about 122,000 cars) Ask: "Do the Egyptians use the roads much for transportation? Do many Egyptians own cars? Do you think many Egyptians use donkeys, bicycles, and motorbikes? Do they still use boats? Why don't more Egyptians own cars?"

Have the pupils look at the pictures on page 61. Ask: "Do the pictures tell you anything about modern Egypt? What do many Egyptians use for transportation and to carry things? Why is Egypt a good place to build modern hotels? Are there many interesting things to see there? Do hotels provide jobs for people? Does Cairo look like a city in the United States? How is it the same? How is it different? Do you think Egypt has many modern cities like Cairo?"

Tell the pupils to look in the atlas and find a political map of Egypt. Have them find all cities with over 100,000 people and list the names and populations. Ask: "Does Egypt have many large cities?" Inform the class that about 34 million people live in Egypt, which means that there are about 1,200 people per square mile along the Nile Valley. Ask:

"Why do people not live in all parts of Egypt? Does Egypt have space to spread out and build big new cities? Why not? Do you think most modern Egyptians live in villages and towns? What do you think most of these people do for a living?"

Tell the pupils to read pages 62 and 63. Ask: "What have the modern Egyptians done to get more farmland?" Help the class find out how reservoirs store water. Ask: "Does Egypt still need more farmland? Do the Egyptians use modern technology to help them survive? How has modern technology helped the Egyptians gain more farmland? Have they found new uses for the river? What other uses have they found for it?" Help the class find out the uses of hydroelectric power.

Tell the class that one of the problems with building reservoirs and dams along the Nile is that the valley is lined with many beautiful buildings, tombs, and statues from ancient Egypt. Ask: "Is it important that Egypt build its reservoirs even though some of these buildings may be lost under water? Which is more important, buildings and knowledge of the past, or people? Is it possible to move the buildings? Do you think it costs a lot? Did the ancient Egyptian rulers have an efficient way of getting many people to do the difficult things that they wanted done?" Tell the pupils that the pharaohs paid their workers with food and clothing. Ask: "Can you guess why the pharaohs stopped building pyramids and built just palaces and temples? Do you think ancient Egypt could afford to put up all those buildings?"

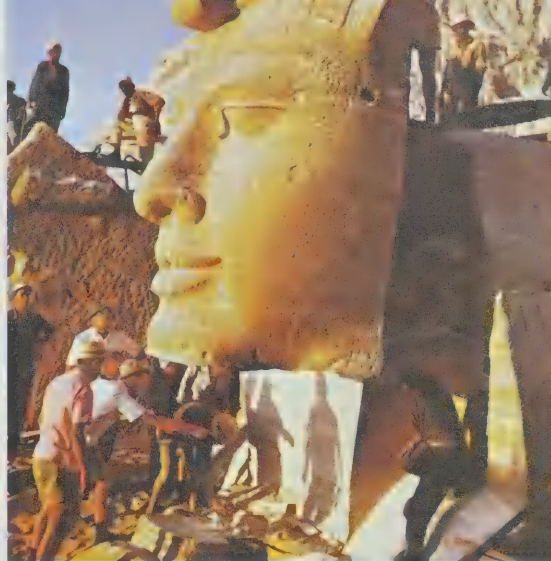
◆ A reservoir (rez'ər vwär) is a place where water is stored.

Planes fly between big Egyptian cities and to and from foreign countries.

The Nile is still Egypt's most important source of water for irrigation. Without the Nile, agriculture still would not be possible in Egypt. But modern Egyptians can control the Nile more than their ancestors ever dreamed. They have built reservoirs to store water for the fields. The reservoirs have helped modern Egyptians turn thousands of acres of desert into fertile farmland. They have made it possible for Egyptians to water their fields all year long.

The Egyptians have also built dams on the Nile. These dams control the floodwaters. Egyptian farmers no longer fear great flood or famine. Farmers can have water for irrigation any time they need it.





The Aswan High Dam The Aswan High Dam is Egypt's newest and largest dam. It is in southern Egypt.

The Aswan High Dam is 3 miles long and 350 feet high. It provides Egypt with water for irrigation and controls the flood level of the Nile. The dam will be very important to the future of agriculture in Egypt.

The Aswan High Dam will be important to Egypt in another way, too. It will help Egyptian industries to grow. By using the Nile itself as a source of energy, the dam creates electric power. Electric power is necessary to keep Egypt's industrial machinery running.

These statues are over 3,000 years old. Water from the Aswan High Dam would have flooded them if they had not been moved.

1. In what ways is modern Egypt like ancient Egypt?
2. What means of travel do the modern Egyptians have that the ancient Egyptians did not have?
3. What is a reservoir? How is a

- modern reservoir different from a catch basin?
4. What hard decisions did modern engineers have to make before they could build the Aswan High Dam?

Activities

1. Tell the pupils to imagine they live in modern Egypt. Have them write make-believe diaries in which they describe their life—what their parents do, what their environment is like, and events that might have happened. Encourage them to use their imaginations.
2. Have the pupils draw a mural on transportation in the Nile Valley from past to present.
3. Tell the class to draw a time line of Egypt from the time of the union of Upper and Lower Egypt to the present. Have them include the Arab conquest.

Answers (p. 63)

1. Modern Egypt still depends on the Nile for water for crops and for transportation. Farmers must still work hard to survive.
2. The modern Egyptians have cars, motorbikes, trains, planes, bicycles, and buses.
3. A reservoir is a place, usually an artificial lake, where water is stored. Catch basins were much smaller than reservoirs. A catch basin was made by damming up the exits of pools of water, or basins. A reservoir is made by building a dam across a river. The water flows into the reservoir and can be controlled with special openings.
4. Engineers had to decide the best place to build the dam so that it would work efficiently. They also had to decide whether or not they could build the dam elsewhere, since the best places would submerge the monuments of ancient Egypt.

INVESTIGATING THE UNIT

Gathering Information

Often only a little is known about a country such as ancient Egypt. One way to try to find out how much is known is to look at the discoveries made by archaeologists. Read about these discoveries at your school or public library. As you read, ask yourself questions such as the following. Why did finding the tombs, pyramids, and temples tell so much about ancient Egypt? Who was buried in the tombs? Were they wealthy or poor people? Which group of Egyptians—the wealthy or the poor—do you think we know more about? Why?

Grouping Information

Go to a museum that has objects from ancient Egypt, or look at books about Egypt that have lots of pictures. Make a list of the different things the pharaohs are shown doing. Next, cut out pictures of leaders and kings of today from newspapers and magazines. Put those that show them doing the same things as what pharaohs did in one pile. Look carefully at the pictures you did not put in the pile. What duties do modern leaders have that the pharaohs did not?

What Does the Map Tell You?

Study a map of the land of Egypt. How much of Egypt is desert? How much is good land in which crops can grow?

Now look at a map that shows the cities of Egypt. Where do most of the people live? Does the kind of land a country has affect where people live?

Using What You Have Learned

Collect a few sticks, a small stone, a bottle top, and some string. Try to make a *shaduf* from these objects. Then see if you can explain what kinds of problems the ancient Egyptians had to solve to make the *shaduf* work.

Comparing and Contrasting

Look at the different things made by the ancient Egyptians. Were they difficult to make? Now look at the objects people make today. Are they hard to make? Do you think the ancient Egyptians had to work harder than the people of today in order to make useful things? to get beautiful things for themselves? How does an advanced technology help to make life easier for people?

UNIT 3

READING LESSON: STRUCTURAL ANALYSIS— PRONOUNCING GEOGRAPHICAL NAMES

Purpose

As pupils progress in social studies, they will meet many new geographic names—names of countries, cities, rivers. They must develop strategies to decode these names.

Introduction

Ask: “Have you ever looked closely at a fried egg? Let’s think about what a fried egg looks like. As you look down into the pan, first you see a bright, golden yolk. Then around that, you notice the white of the egg. Sometimes there is a lot of white to the left, sometimes there is a lot to the right; but the thing that holds it all together is the egg yolk. A syllable is like that. There is a bright, golden yolk in every syllable—the vowel, or the vowel combination, that gives it the sound. Let’s look at some one-syllable words we all know, and identify the ‘yolk’—the bright, golden vowel in the middle of the word.”

Write the words on the chalkboard. Have pupils circle the vowel with a piece of bright yellow chalk. Have pupils identify the “white” of the “egg”—the consonants which cluster around the vowel.

south high way men crafts west form in

“Every *long* word you meet in your reading is made up of syllables. Every long word can break up into small parts. Let’s put some of these words together to make long words.”

Have pupils separate the syllables with slashes and circle the vowel.

highway southwest craftsmen inform

Development

Say: “There is a simple technique for breaking up long words into syllables. Let’s look at some of the long words we will meet in Unit 3. These are all names of places.”

Write the following words on the board and develop the technique.

Himalayas	Germany
China	Soviet Union
Canada	

1. Have the class circle the vowels. Say: “Each vowel, or vowel combination, is *one* sound. If two vowels ‘touch’ (Soviet), either separate them into two different sounds, or pronounce them as one sound. This is ‘trial and error.’”

2. Have pupils group the consonants around the vowels they are next to—in front and behind. Say: “Don’t worry too much about being exactly ‘right’—the main thing is to get the word into small parts. Mark your syllable breaks with slashes.”

3. Have the children say each syllable separately. Say: “Now try to put the word together. As you do this, think about what the word could possibly be. Say the word several times, until you naturally stress one part. Now you should have the word!”

Application

Have the class follow the 1-2-3 procedure with the following words:

Manchuria	Wang Ting-tung
Tibet	Chinese
Shang	Hwang Ho
Anyang	Yangtze
Honan	

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READING LESSON PLANS

CHINA: AN ANCIENT, YET MODERN, CULTURE

You who come from the old village—
Tell me what is happening there?

WANG WEI



Knowledge Objectives

Understanding that China is a large country with many different kinds of land and climate.

Knowing that Chinese civilization developed in the Yellow River Valley more than 4,000 years ago.

Understanding how archaeologists discovered Shang China.

Understanding that China is mainly an agricultural country but that only 25 to 30 percent of its land is arable.

Knowing that China has more people than any other country in the world.

Understanding what communes are and how they are formed in China.

Understanding some of the differences between ancient and modern China.

Value Objectives

Appreciating the achievements that made the civilization of the Shang possible.

Appreciating how China is becoming modernized.

Appreciating the willingness of Chinese people to work hard and sacrifice.

Skills

Inferring information from pictures.

Reading maps to obtain information.

Using the evidence of paintings and other artifacts to make hypotheses about a past civilization.

Comparing and contrasting an ancient way of life with its modern counterpart.

Evaluating a country's methods of solving its problems.

LESSON 1 (pp. 66-71)

Lesson Objectives: Understanding that China, the third-largest country in the world, is climatically and geographically diverse. Knowing what the main regions of China are.

Lesson Skills: reading maps, "reading" pictures, comparing and contrasting, classifying, observing, analyzing information

Introduction

Tell the class to look carefully at the picture on page 66. Have the pupils compare it with the top and bottom pictures on page 89. Ask: "Is anything about the pictures the same?" Tell the pupils to think about farms in the United States. Ask: "Leaving out the fact that the people in these pictures are Chinese, why could these pictures not have been taken in the United States? How are people in the pictures working the land or getting ready to work it? Do people in the United States farm their land in this way? Why are there so many people working together?" Tell the class that the pictures show one very important fact about Chinese agriculture: Chinese farming is based on intensive labor. That means it is based on the constant hard work of many people. For centuries, farming in China depended on back-breaking labor. Ask: "Why have the Chinese farmed their land in this way? Why has their way of farming changed so little through the centuries?" Tell the class that the next few pages explain some of the reasons why intensive farming developed in China.

The Land of China



Today, China is a very large country. It has an area of about 3,700,000 square miles. It is the third-largest country in the world! Only the Soviet Union and Canada are larger. Look at the map on page 68. Compare the size of China with the size of the United States. Is China much larger than the United States?

Gentle breezes and icy winds Because China is so large, it has more than one kind of climate. Southeastern China is a region of plains and rolling hills. Gentle winds blow inland from the China Sea and bring plenty of rain to water the land. Rivers also water the land.

When flowers are blooming and crops are growing in southeastern China, snow is falling on northern China. Northern China has a much harsher climate than southeastern China. Winters are long. Deserts and mountains make farming difficult. There are few rivers here.



China grows more rice than any other country. Rice grows best in fields that are covered by water, and where the climate is warm and wet. In southeastern China, two crops of rice can be grown each year. Why is this part of China good for growing rice?

Lesson Development

Have the class read the opening paragraph on page 67. Next, have the pupils look at the map on page 68. Ask: "Is the United States larger than China?" The areas for this and similar comparisons are:

U.S.S.R.—8,647,489 sq. miles
Canada—3,851,809 sq. miles
China—3,691,512 sq. miles
United States—3,615,123 sq. miles (this includes 586,412 sq. miles in Alaska and 6,450 sq. miles in Hawaii)

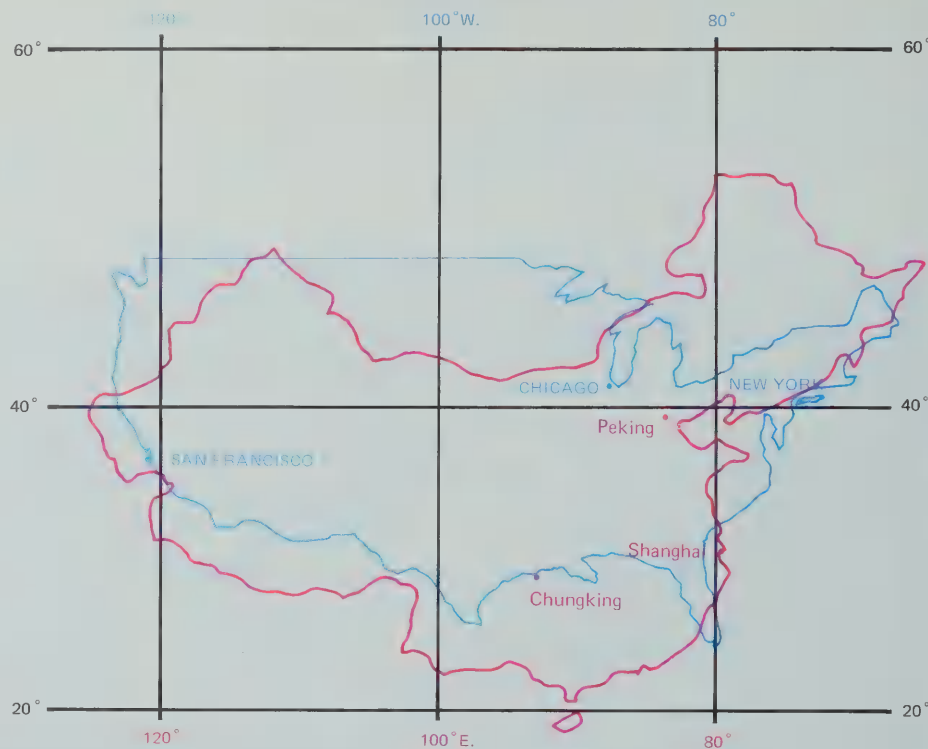
Tell the class to find Peking on the map on page 68. Ask: "What kind of weather do you think of when you think about Peking? Is it hot or cold? Is Peking on about the same latitude (the lines running horizontally around the globe that measure distance from the equator) as New York City? Do you think of Peking as being farther south than Chicago?" Have the pupils find Istanbul (Turkey), Naples (Italy), and Madrid (Spain) on a world map. Ask: "Do you think of Peking as having the same kind of weather as Istanbul or as the other cities you have just located? Why are some of these cities hotter than others?"

Develop the idea that many factors determine climate. Tell the pupils to look at the continent of Asia on a world map. Ask: "Is Asia a large continent? Is much of it far from oceans or from any large body of water? Does China have large seas, such as the Mediterranean Sea, or large gulfs, such as the Gulf of Mexico?" Inform the class that large bodies of water help modify the climate. The reason is that water takes longer to heat up and cool than land. Ask: "Do seasonal changes come more slowly in areas nearer or farther away from water?"

Tell the class to read the rest of page 67 and page 68. Then have them look at the map on page 70. Tell pupils that in winter, dry, cold, dust-laden winds (monsoons) blow out of Central Asia (the area northwest of the Kun Lun [kūn' lūn'] Mountains) into China. Ask: "Is Central Asia far from any oceans? Do you think winter in northern China is cold and bitter? Why isn't winter in southern China cold and bitter? Do you think the cold winds from the north are stopped by the mountains you see on the map? Does this help keep southern China warmer?" Tell the class that in summer, warm, moist winds (also called monsoons) blow into China from other directions—from the oceans in south and east of China. Summer is the rainy season. Too much rain and wind cause floods in China. Too little rain causes drought.

Have the pupils find Manchuria on the map. Ask: "In what part of China is Manchuria?" Now have the pupils find the Yellow River. Inform the class that the easternmost part of the Kun Lun Mountains (also called the Chinling [chin' ling'] Mountains) is where the label is. These mountains and the Yangtze River to the east form the boundary between northern and southern China. Ask: "Can anyone tell me why this line forms the boundary between northern and southern China?" Have the pupils find a land map of China in an atlas. Have them find southwestern China, a place of high plateaus and mountains. Tell them that northwestern China is mainly desert and basin land. Have the pupils find this area of China on the map. Tell the pupils to look in an encyclopedia and learn what plateaus, basins, and plains are.

The United States Compared With China



◆ man chur' ē ē

◆ Fertile (fēr'tl) means good for growing food.

◆ him' ə lā' ə

◆ A salt marsh is land that is often flooded by salt water.

Northeastern China, however, is a region of rich forests and fertile plains. This region is called Manchuria. In Manchuria, winters are long, as they are in all of northern China. Although the soil is rich, there is only time to grow one crop each year.

Western China is the least fertile region of the country. Here, bitter winds from the Himalaya Mountains make the winters icy cold. Mountains, deserts, salt marshes, and very little rainfall make farming almost impossible.

MASTER OF THE FLOODS

The following story is based on an ancient Chinese myth. A myth is a story that tries to explain things about nature that people cannot understand.

The ruler of heaven was named the Yellow Emperor. For many years, he was sad and angry because the people on earth were wicked. So to punish them, he made rain fall on the earth.

Soon, one after another, the rivers overflowed their banks. The people became frightened. They began to run away. Some got no farther than their rooftops before the waters came. The rest ran for the hills. There, they looked for shelter in caves.

Of all the spirits, only one looked down on the world of humans and pitied them. This spirit was Kun (kūn) grandson of the Yellow Emperor. Kun begged the Yellow Emperor to stop the floods. But the ruler of heaven refused. Kun became sad.

Then, one day, he saw two strange animals coming slowly toward him. One was an owl and the other was a turtle.

"What problem is causing you such sorrow, great spirit?" asked the owl.

"I am filled with pity for the suffering humans," answered Kun. "And yet I do not know how to free them from the great flood."

"Easy," said the turtle. "All you need is the Magic Mold."

"What is a Magic Mold?" said Kun.

Then the owl said, "It's mold—earth, soil, you know; and it's magic. That means it can grow, by itself, to any size you want." He also told Kun his grandfather had the mold.

Soon, the three of them had worked out a plan to steal the Magic Mold from the Yellow Emperor.

As soon as he had the Magic Mold, Kun went down to the flooded earth. Next, Kun broke off a tiny lump of his Magic Mold. He threw it into the water and told it to grow until he said stop. The mold grew. Soon it rose above the water. The Magic Mold kept growing. It soaked up the water.

At last, when the earth was filled with brown, rich, dry soil, Kun ordered it to stop. Now the poor people came out of their caves on the mountainsides. They stumbled down the hill to touch the good brown earth. Some brought with them seeds they had managed to save.

Why do you think the ruler of heaven was named the Yellow Emperor? What kind of soil do you think the Magic Mold was? What things about nature does the story try to explain?

Ask: "Do you think that people farm land differently in northern and southern China?" Explain that because southern China is warm and moist, farmers can grow crops all year long. They especially grow rice. Rice takes fewer minerals out of the soil than wheat does. Also, more rice than wheat can be grown in an acre, especially if seeds are sown by hand. Ask: "Why is rice a good crop for China, a country with more people than any other country in the world?" To help them grow rice, the Chinese have built thousands of miles of canals. Southern China has few roads. It mainly has footpaths like those shown in the picture of land around Shanghai on page 67. Ask: "Where in China is Shanghai?"

Inform the pupils that northern China grows different kinds of crops. It grows wheat, kaoliang (kaülē' äng'), and millet by dry farming. Have the class find out what these crops are and how the Chinese use them. Find pictures of different Chinese farming regions and bring them to class. Try to find pictures showing the irrigated terraces of the south and the nonirrigated ones of the north. As you show the pictures to your pupils, ask questions such as: "What did the Chinese do to their hillsides so that they could farm them? Do the Chinese grow other kinds of crops between the rows? What animals are the farmers using? (The north uses mules, donkeys, and an occasional water buffalo, while the south depends on the water buffalo.) Why does one picture show water terraces while the other does not? How do people carry their crops from the fields? Do you think the people of northern China eat as much rice as people in southern China?"

Ask: "Is China mostly hilly or flat? Where are most of the forests in China? Where are the largest plains in China? Does China have much flat land for farming?" Inform the pupils that only 25 to 30 percent of China is suitable for farming. In contrast, the United States can farm 50 percent of its land.

Tell the class to read the feature on page 69. Ask: "Did the people in this myth live near the mountains? Did they know how to farm? Did people believe they could help themselves or solve their own land problems? How did they explain changes in nature?"

Instruct the class to read page 70. Tell the pupils that loess is a kind of soil that does not crumble or slide down when a section of land is dug out or sliced away. It continues to stand—like a wall. But it does crumble and dissolve easily in water. Heavy rains and winds cause deep trenches and gullies to develop in the loess. The dirt-filled water runs off the land into the river. Ask: "What river is in northern China? What color is loess? Can you guess how the Yellow River got its name? how the Yellow Sea got its name?" Tell the class that a little more than half of the Yellow River is water. The rest is made up of loess. The Yellow River has changed the place where it flows into the sea a number of times. Ask: "Can you guess why the Yellow River has changed its outlet to the sea? Do you think the soil the river carries has anything to do with this?"

Have the class read page 71. Inform the pupils that the Yellow River carries so much soil all the time that it builds up its own bed. This means that it keeps adding soil to the bottom of the river so that the river becomes higher and

◆ les'

► Look at the map below. On what river was Shang China located? Are there many mountains in that part of China?

Yellow soil Much of the land in the north of China is covered with a dusty, yellow-brown soil. This soil is called **loess**. Loess is formed from tiny pieces of mineral that are carried by winds from the deserts of western China. It almost covers the plains of northern China. Because this soil is so fertile, crops grow easily here.



Mighty rivers Two giant rivers wind their way across the plains and mountains of China—the Yangtze River and the Hwang Ho or Yellow River. Find these rivers on the map of China on page 70.

The Yangtze is the longest river in China. It starts in the mountains of Tibet. Then it flows eastward for 3,100 miles until it meets the East China Sea.

The Yellow River is the second-longest river in China. Like the Yangtze, the Yellow River begins in the mountains of Tibet and runs eastward across China. But it is about 200 miles farther north than the Yangtze River.

The Chinese people depend heavily on the Yangtze and Yellow rivers. These rivers are the main highways of China. They are also steady sources of water for crops.

But the giant rivers bring sorrow as well as joy to China. Sometimes, they overflow their banks and destroy acres of land. Then millions of Chinese are left homeless. The Yellow River floods more often than the Yangtze River. Since early times, it has flooded its banks more than 1,500 times. This is why the river is often called “China’s Sorrow.”

♦ yang’ sē’

♦ hwāng’ hō’

♦ tē bet’

♦ Why do floods leave people homeless?

1. Is China a large country? What countries are larger than China?
2. Where is Manchuria? How is the climate of Manchuria different from the climate of southern China?
3. What part of China has very little land that is good for growing crops?
4. Name the two longest rivers of China. Where do they begin? Into what body of water do they flow?

higher. In some places, the Yellow River flows way above the surrounding countryside. Ask: “What happens if the river breaks through the walls the farmers have built alongside the river?”

Tell the pupils that because of all the soil the river carries, large oceangoing ships cannot sail along the Yellow River. It is the Yangtze that is the great transportation route of China. Instruct the pupils to look at a political map of China in an atlas and find out what large cities are along the Yangtze River. Ask: “What cities are along the Yellow River?”

Ask the class: “How would you describe the land of China? Does China have much good land for farming? Does most of China have a long growing season? Why do the Chinese practice intensive farming?”

Activity

Tell the class to research and draw an agricultural map of China. Have the pupils include the regions of China and all their principal crops.

Answers (p. 71)

1. China is a large country. Only the Soviet Union and Canada are larger in size than China.
2. Manchuria is in northeastern China. Southern China has a very warm climate with much rainfall, and Manchuria has cold, bitter winters, hot summers, and normal rainfall.
3. Northwestern and southwestern China have little land that is good for growing crops.
4. The Yellow and Yangtze rivers are the two longest rivers in China. They begin in the mountains of Tibet and flow eastward into the Yellow and East China seas.

LESSON 2 (pp. 72–76)

Lesson Objectives: Understanding that civilization in China developed along the Yellow River Valley about 4,000 years ago. Knowing that it was only within this century that archaeologists discovered that Shang China existed.

Lesson Skills: comparing and contrasting, observing, “reading” pictures, recalling, reading maps, hypothesizing, inferring

Introduction

Tell the class to look at the map on page 70. Ask: “What do you remember about the geography of China that explains why people in different areas of China were cut off from each other and from people in other areas of the world? What kind of land is to the west of China? What is to the south and east? to the north?” Have the pupils find Shang China on the map on page 70. Ask: “Why do you think Chinese civilization began there rather than along the Yangtze River?” Explain that scholars think that 4,000 years ago, land along the Yangtze and around the coast of China was swampy, filled with marshes and soil that would not grow many crops. It was too rainy farther south, and the land was covered with forests, which had to be cut before farms could be made.

An Ancient Past

The Metropolitan Museum of Art, Gift of Mrs. John Marriott, Mrs. John Barry Ryan, Gilbert W. Kahn, Roger Wolfe Kahn, 1949.



Chinese civilization began about 4,000 years ago in the valley of the Hwang Ho, or Yellow River. Find the Yellow River on the map. Here, the waters of the Yellow River kept the soil fertile throughout the year. Crops could be planted and the people in the valley had a steady source of food. Over the ages they looked for new ways to improve their technology.

AN ISOLATED CIVILIZATION

The civilization of the Yellow River Valley was **isolated** from other civilizations. The early Chinese of the region thought of their land as the center of the world. They called it *Chung Kuo*, which means “Middle Kingdom.”

If we study the geography of the country, it is easy to see why the people of the Yellow River Valley developed on their own. Look at the map of China on page 70. It shows the natural features of China—such as mountains, deserts, and bodies of water.



◆ Civilization (siv' ə lə zā' shən) is the name given to the ways of living of a group of people.

◆ Technology (tek nol' ə jē) is all the skills and ways of doing things a people develop. Tools + knowledge = technology.

◆ Isolated (i' sə lāt ed) means to be apart from others.
 ◆ jung' gwō

The Great Wall of China is over 1,500 miles long. It was started more than 2,000 years ago, and it protected China from invaders from the north. Horsemen would ride along the top.

Northern China was a fertile land that was easily farmed. It had few forests. Although China was isolated from other civilizations, northern China was a crossroads within China itself. News was brought in by nomads from the north, northeast, and northwest. Members of tribes from the south occasionally traveled north to Shang China. The result was Shang civilization. Tell the class that the object shown on page 72 was made by these people who lived along the Yellow River Valley about 4,000 years ago.

Lesson Development

Instruct the pupils to read page 73. Ask: “Is China far from the Indus Valley, Egypt, and Mesopotamia? Why did the Chinese think of their land as the center of the world? What kind of land was around them? What kind of people?” Have the class look at the picture of the Great Wall on page 73. Tell the pupils that it was built more than 800 years after the end of the Shang dynasty. It was built to keep “barbarian” nomads from attacking China from the north, northeast, and northwest. Help the class find a map of China that shows the Great Wall. Ask: “Was the Great Wall built far away from the area where the Shang had lived? What kind of lands do you think the invaders lived in? What did the northern Chinese have that the barbarians did not have?” (The Chinese had rich farms, warm homes, beautiful things, and better tools than the nomads.)

Tell the class to read page 74 and the beginning of 75 to find out how we know about the Shang and what scholars have been able to find out about them. Next, have the pupils look on page 74 at the picture of bronze objects that archaeologists have found at sites of Shang remains. Left of the platform, the objects are: a vessel for wine, a server for mixing wine and water, and a goblet; another wine goblet is in front of the platform; on the stand are a container for carrying offerings of black millet wine, a wine vessel, two goblets, and another container; to the right are several wine vessels; the one in the back row is for heating wine. Any of the vessels with three legs could be placed over the fire and warmed. Ask: "Did the Chinese have many different kinds of vessels for wine?"

Tell the pupils to look in newspapers and magazines and bring in as many pictures of cups, glasses, and containers for mixing and serving liquids as they can find. The glasses should be only those used for special occasions. That is, they should be "for company."

Have the pupils determine whether there are many different kinds of vessels for wine and for water. Ask: "Why do you think we have so many different kinds of glasses and containers? Do most people use all of these different kinds of glasses? Do they come from a time when people used them all? Do you think the Shang who used the vessels on page 74 were wealthy and important, and had considerable free time? Did they enjoy eating

► What effect does isolation have on a group of people? Do you think it is a good or bad thing?

◆ är' kē ol' ə jists

Which natural features are west of the Yellow River Valley? Which are east? Which are north and south of the valley? Do you think these natural features would be difficult to cross? Why was the civilization of early China isolated?

The civilization that began in the Yellow River Valley has lasted almost 4,000 years. This means that China has the longest history of any country in the world.

How do we know about China's past? Scientists called **archaeologists** have given us much information. Archaeologists study the objects ancient people left behind: tools, weapons, pottery, sculpture, and paintings. Then archaeologists try to imagine what life was like for the ancient people who used these things.

Archaeologists also study the written records left behind by ancient Chinese people. The

These bronze vessels are about 3,000 years old. Archaeologists found them in ancient tombs. What do you think these different religious vessels were used for?

The Metropolitan Museum of Art, Munsey Bequest, 1924.



earliest written records are from a period in Chinese history known as the Shang dynasty. The Shang were a group of people who settled in the Yellow River Valley more than 3,500 years ago. In the past, people only knew about the Shang from legends. No one had found proof they had existed. Then, about 45 years ago, the first clues were found in Anyang.

THE SHANG

Anyang is a city in northern China. It is in Honan Province and north of the Yellow River. Find these places on the map on page 86.

Ancient bones Many of the people who live around Anyang are farmers. Every day they go to work in their fields. Sometimes the farmers find pieces of bone with strange marks on them. The farmers thought these bones were dragon bones, and they sold them to Chinese druggists. The druggists would grind the bones into powder for medicine.

Then, about 45 years ago, archaeologists became interested in the dragon bones. In 1928, they began to dig up the fields around Anyang to find more of them. Between 1928 and 1937, thousands of dragon bones were found. After studying the bones, archaeologists discovered that they were not the bones of dragons after all. They were oracle bones, which had been used by ancient Chinese people to foretell the future. Archaeologists dated the oracle bones back to the Shang dynasty.

◆ shǎng' dī' nàs tē

◆ A dynasty is a series of rulers who all belong to the same family.

◆ ǎn'yǎng'

◆ hō' nán'

◆ An oracle (ôr' ə kl) is a person or thing who speaks for a god.

◆ To date something means to find out how old it is.

and drinking? Is there much difference between modern glasses and the vessels used by the Shang?" Tell the class that one difference is that the Shang vessels are of bronze. Make sure pupils understand that glass was rarely used in the world at this time. It was not used at all by the Chinese during this period. Even later, the Chinese were never much interested in clear glass.

Ask: "Is technology the only thing that determines how things are made? Do people's interests have anything to do with what objects are made?" Tell the class to look at the pot on page 72. Ask: "Do you think this pot was used for everyday cooking?" Tell the class that it is a ceremonial pot. It was used in religious ceremonies only. Point out the "spines" on the side and the elaborate carving. Tell pupils to look at the left side of the pot and imagine it is the left profile of a face. Have them find the circular eye with the dot for the pupil. Above it is a curved horn. An ear can be seen to the right of the eye, and to the right of that is the animal's tail curling upwards. In front of the eye is the nose, or the tusk. Tell the class that this is called an animal mask, and it was placed on most Shang vessels. It was also used by the dynasty immediately following the Shang. Scholars today do not know exactly why these masks were placed on vessels. They do know that the masks were religious in meaning and that the designs were either pictures of spirits and demons or remembrances of animals from the hunting and nomadic days of the Shang past. Ask: "What did archaeologists learn about the Shang from their vessels?"

Tell the class to read the rest of page 75. Inform the class that scholars were able to read the oracle bones because even though the writing was ancient, it was enough like modern writing to be figured out. That is how we know about the Shang dynasty. The oracle bones contained the names of most of the Shang kings. Make sure the class knows what a dynasty is. Ask the pupils to explain what it is in their own words. Ask: "What happens when the king dies? Who rules after him? What happens if he has no sons? What if he has no daughters or other relatives either? How do dynasties end? Suppose someone overthrows the dynasty. Should he say he is part of the old dynasty or should he start his own dynasty? How long did the Shang dynasty last?"

Tell the class that while digging up the oracle bones, scholars found an ancient city—the capital of the Shang (or Yin) people. Archaeologists found many kinds of buildings, tombs, and workshops of the Shang, all of which told much about the Shang way of life.

Have the class read page 76. Ask: "Do you think it took skill to make the bronze mask shown on this page? Is the mask lifelike? Could you make such a mask?"

Activities

1. Tell the class to imagine they are archaeologists looking for dragon bones in Anyang. To their surprise, they also find vessels like those on page 74. Have the class write a few paragraphs telling about what they found and what they first thought the vessels were.
2. Have the pupils draw a picture showing Shang craftsmen making bronze vessels. Show the craftsmen imagining themselves meeting the animals they are decorating the bronzes with.

◆ Nomads (nō'madz) are people who wander from place to place looking for food or grassland.

WHO WERE THE SHANG?

Modern scholars think that the early Shang people were a tribe of nomads. They wandered from place to place until they finally settled in Honan Province. They fought with the people who lived there and gained control of a large area of land. They controlled this area for 600 years—from about 1700 to 1100 B.C.

A Shang mask Did the Shang look like the Chinese people of today? Archaeologists have answered this question. In a tomb at Anyang, they discovered a Shang mask. Look at the picture of this mask below. And now look at the pictures on page 77. Compare these pictures. What do you think archaeologists learned about the Shang people from this mask?

Archaeologists have found many things of the Shang people. They have found pots, weapons, statues, and chariots. Only a few things show what the Shang looked like. This bronze mask is one of them.





People work hard in China. But they know that the government will take care of them when they get too old to work.

LESSON 3 (pp. 77–83)

Lesson Objectives: Appreciating the achievements and complexity of Shang civilization.

Lesson Skills: inferring, observing, “reading” pictures, recalling

Introduction

Ask the class: “Do you remember what the term *civilization* means?” (An advanced way of life of a people. Usually it refers to the way of life that developed in cities.) Ask: “What kind of advanced ways do you think a civilization should have? Should it have metal tools, farming, some sciences, beautiful buildings, jewelry, art, writing, and some means of transportation?” Tell the class to keep these things in mind as they read the section on the Shang way of life.

Lesson Development

Tell the class to read page 77. Inform the class that besides bronze vessels, archaeologists found many bronze weapons. Ask: “What kind of bronze weapons did the Shang use? Were the Shang a peaceful people? Do you think Shang battles were fierce?”

Instruct the class to look at the pictures on page 78. Ask: “What arts are shown in the picture on the top of the page?” Tell the class that the animals line the way to the tombs of kings who lived during the Ming (1368–1644) dynasty. Have the pupils identify as many animals as they can. Ask: “Are all the statues of real animals? Does China have elephants and camels? Do you think China might have had elephants in the north at one time? Do you think China once ruled land far to the south and the northwest? Did the Chinese expand far from their

THE SHANG WAY OF LIFE

Archaeologists found many other objects in the fields around Anyang. These objects helped them put together a picture of how the people in the earliest Chinese civilization lived.

A choice of weapons Archaeologists found many weapons at Anyang. Among these weapons were knives and spearheads. Archaeologists also found a weapon called a dagger-ax. This ax had a pointed blade with two sharp edges.

Archaeologists also know that the Shang used bows and arrows and war chariots. The chariots had two large wheels and were probably pulled by horses.

These objects taught the archaeologists something important about the Shang way of life. What do you think they learned?



◆ A chariot was a cart with two wheels that was pulled by animals. It was used for fighting or racing.

► Do you think the Shang were good fighters? Why?

Shang homeland?" Tell the class to look at the bottom picture. Ask: "What skills and arts are shown in the picture? (writing, music, silk-making, pottery, furniture-making, a cultivated way of living) How did people dress? Did they use buttons and safety pins? Did men and women dress the same?"

Have the class read pages 79 and 80. Tell the pupils that most of the Shang people did not hunt—only the kings and nobles. They did it for sport. Ask: "Did the Shang hunt dangerous animals? fast animals? Do you think that hunting was a reminder of past nomadic days? Did early nomads usually hunt for a living?" Inform the class that the oracle bone from which the record of the hunt was taken is shown on page 83. Have them look at the drawing on page 83. Ask: "Can you find anything that looks like a deer? a tiger? Are there any other animals? Do you see anything that might be a number?"

Have the pupils read "Kings and peasants" on page 79. Tell them that throughout most of China's history, society was not divided up this way, but into: scholar-officials at the top, followed by farmers, artisans or craftsmen, and merchants. Ask: "Do merchants also farm for a living? Who grows the food merchants eat?" Explain that even today 80 percent of the Chinese people are farmers. They barely grow enough to support the 20 percent who are not farmers.

Have the pupils look at the picture on page 74 again. Explain that these Shang vessels were used for offering food and wine to ancestors (the first parents or those to whom a family traced their beginnings). Wine was poured onto the ground during the ceremony. Tell the class that the Shang believed that the spirits



Courtesy of the Museum of Fine Arts, Boston, Denman W. Ross Collection.



Later Chinese worked at perfecting the arts begun by the Shang. The statues above are about 600 years old. The 900-year-old painting shows scholars studying Chinese writings.

A settled people The Shang were both farmers and hunters. Archaeologists think they may have learned to farm from their neighbors. The Shang farmed crops such as millet, wheat, and rice. Millet was probably the most important food crop. It was also used to make wine.

Archaeologists have found evidence that the Shang also hunted wild game. The following record of a hunt was found on an oracle bone.

... Hunting on this day, [we]

actually captured:

Tigers, one;

Deer, forty;

Foxes, one hundred and sixty-four;

Hornless deer, one hundred and fifty-nine;

and so forth. . . .

What does this record tell you about the environment in which the Shang lived?

Kings and peasants The Shang people seem to have been divided into different classes, or groups. In the upper class were the Shang kings and soldiers. The next class was made up of scribes, craftsmen, and people who could predict the future. Most of the people were peasants. Peasants made up the lowest class.

Shang houses Peasants lived in thatched huts built a little below the ground. Each hut was one very large room. The room may have been divided into smaller areas by curtains or wooden boards.

◆ Millet is a grain that is used for food in Asia and in southern Europe.

◆ Wild game is animals that are hunted for food.

◆ A scribe was a person who copied records.

◆ Peasants are a class of farmers.

of one's ancestors could help one in daily life. Therefore, the Shang thought it important to do homage to the spirits of their ancestors. These particular vessels were used only by kings and nobles; the names of the ancestors were often placed on them.

Develop the idea that Chinese society was based on the family and that ancestor worship is an important part of that system. Tell the pupils that as early as Shang times, Chinese society worshiped ancestors, although the system was not as developed then as it became centuries later. Ask: "Do you think farms were worked by members of a family in early times? Would having more people in the family help make farming easier? Do you think that in many small villages almost everyone was related? Would villages isolated in river valleys and hills keep the family as the only, or almost the only, important group in society? Why?"

Tell the class that in later times kings fought kings, and the family increasingly became the only security people had. But eventually even families began quarreling. The poor and the weak were not taken care of. Six hundred years after the end of the Shang, a thinker named Confucius (kən fyū' shəs) looked around him and noticed how people had to depend on their families. But the families were not doing what they should do. Therefore, Confucius went around the countryside telling the fighting kings that they should set an example for the people, like great rulers of the past. They should be like fathers of the family. The great heroes and kings of the past, like the Shang, respected their ancestors and took care of the people. They taught people how to make their life better. Con-

Confucius taught people that everyone should learn to do good and to be good. Rulers had a duty to be especially good. Confucius made rules explaining how people should behave. These rules covered the relationships between rulers and the ruled, fathers and sons, older and younger brothers, husbands and wives, and among friends.

Explain to the class that later, the Chinese government made the teachings of Confucius the standard for the entire country. Increasingly, families taught what is right and wrong, kept up schools, helped the poor, and took care of everyone. Often they made the laws for the entire village and beyond. Fathers were highly respected, as were all old people. The oldest living father of a family had great power. The kings said these men were "the fathers of the country." Ask: "Do you think these kings were very powerful?" Tell the class that the kings kept looking to the past for advice. Soon, the important books of the past, especially the writings of Confucius, became like sacred books. Examinations were given, testing people's knowledge of these books. Those who passed with high grades became the officials and leaders of China. Ask: "Would the family and this examination system help prevent change?"

Tell the class that although villages and the family were important to the Shang civilization, the Shang also lived in cities. Because the city dug up at Anyang was the capital of Shang, archaeologists found many royal tombs there, as well as bronze objects used by the nobles. They also dug up a whole section of the city in which craftsmen lived. Scholars found the work and tools of builders, brickmakers, pot-

The Shang who were richer lived in larger homes built above the ground. Archaeologists think that these homes may have been built on top of stone or bronze bases.

Shang workshops Archaeologists also found small pits. These pits were Shang workshops. The entrance to a workshop was above ground. But the workshop itself was underground. Mats lined the earth floors.

In these workshops, archaeologists found many very interesting Shang objects—pottery, arrowheads, deer horns, shell cups, and tools.

SKILLED CRAFTSMEN

The objects found in the workshops told archaeologists what kinds of metals and tools the Shang used.

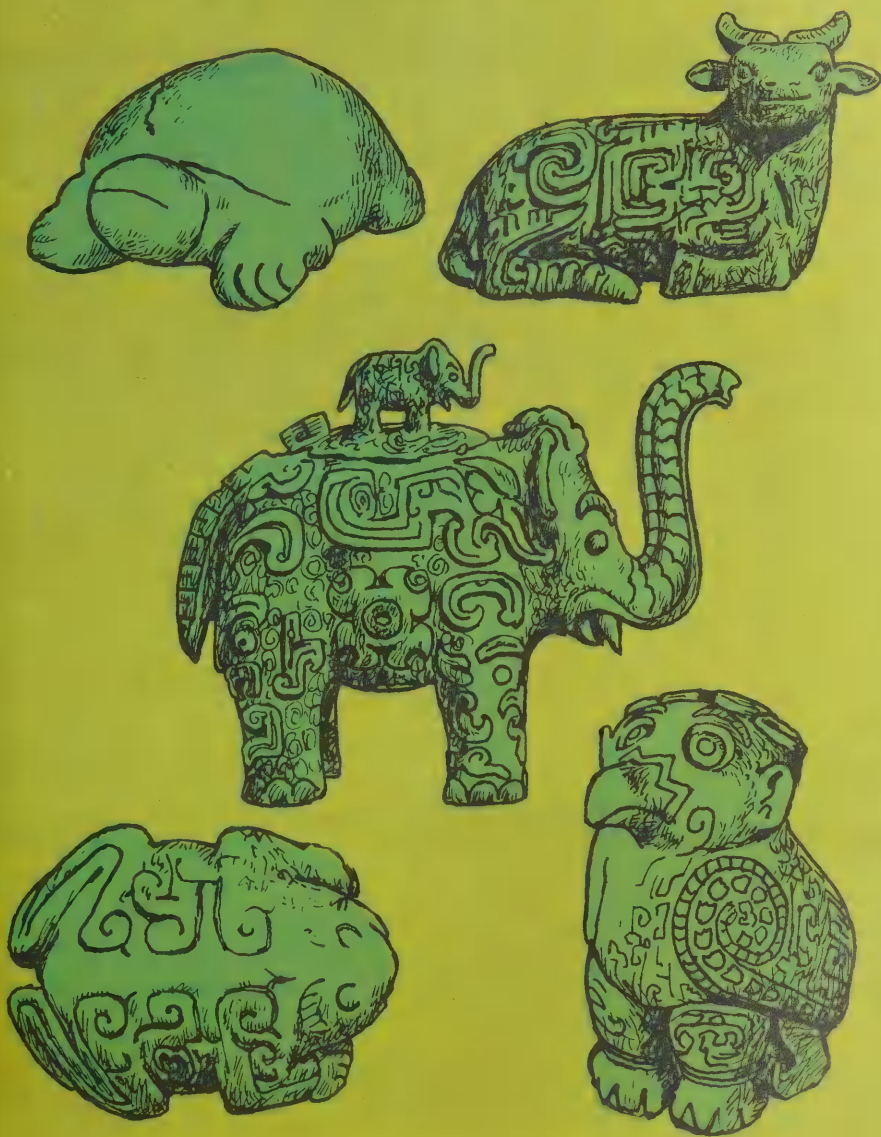
Treasures in bronze Shang craftsmen knew how to work with bronze. Bronze is a mixture of several different metals, mainly copper and tin.

The Shang people made beautiful objects out of bronze. They made drinking cups, pots, and wine holders. The Shang often decorated these objects with pictures of animals and birds.

Working with bronze The Chinese also used bronze to make weapons, such as arrowheads. Here is how they did it.

On a piece of clay, Shang craftsmen carved out several arrowhead shapes. The arrowhead

Find out how bronze is made. Do you think the Shang would have had to know a lot about metals in order to make bronze?



ters, bronzesmiths, jade carvers, and silk workers. Tell the class that most bronze was used for weapons. Few craftsmen's tools and no farm tools at all were made of bronze. Ask: "Did the farmers benefit from the ability to make things in bronze? Did they benefit indirectly? Did bronze weapons help make their life more secure? Who uses valuable metals today? What are some of the valuable metals of today? (uranium and radium) Do most people use things made from these metals? Would it be dangerous for people to use these metals as they wished? What are made with these metals? Are they used for peaceful purposes also?"

Ask: "Have you ever heard of the term *Bronze Age*? What does it mean? Why do you think scholars named a whole period of history after the use of a metal?" Tell the class that the use of copper and bronze signals the end of the Stone Age and an advance in the technology of the world.

Have the class read page 82 up to the section on Shang writing. Ask: "What other crafts did the Shang have? Was making bronze difficult?" Tell the class that the Chinese discovery of bronzemaking is one of the great puzzles of the past. The reason is that bronze first appeared in history as an already advanced art. Usually there are signs of the craft during the early stage of its development. To this day, bronzesmiths have not improved on the Shang art of making bronze objects. If you have any samples of copper and bronze at home, bring them into class as examples of these two metals. (Remember that pennies are mostly copper.) Have the class look up bronze art objects down through the centuries. Ask: "Are any of the objects and statues you see

more difficult to make than the Shang bronzes?" Have the pupils explain their answers. Have them compare the animals on page 81 with those on page 78. Ask: "Are any of the same animals shown in both pictures? How are the Shang elephants different from the Ming elephants? Did the Shang have a special way of designing their statues, whether they were of stone or bronze?"

Have the class read pages 82 and 83. Ask: "Was Chinese writing associated with magic?" Tell the class that the Shang mostly asked the oracle bones about the weather, the hunt, farming, help from ancestors, and so on. Find some pictures of Chinese calligraphy or Chinese art with calligraphy in the picture. Bring them into class. When you read this section on Chinese writing, show them to the pupils and ask: "Do Western artists ever give samples of their handwriting to hang on the walls? If you saw a note by Picasso hanging on someone's wall, what would you think?" Explain to the class that the Chinese continued to respect the written word for a long time. The written word was important for another reason in China. While the Chinese all use the same written language, people in different regions speak different dialects, or varieties, of Chinese. Therefore, written Chinese was an important means of communication in China.

Ask the class if they know what picture writing is. Ask: "Do you know if the Chinese have an alphabet? How did Chinese writing develop, from drawing pictures or from sounds, like ours? Why are Chinese writing and painting closely related?"

Ask: "Were the Shang people an advanced people? What important techniques and abili-

► Could Shang craftsmen make more than one arrowhead at a time? Is it important to be able to make more than one object at a time? Why? What do you think the Shang may have done with any arrowheads they did not need?

► What does this tell you about Shang tools?

► Do you think the Shang were skilled craftsmen?

shapes were connected to each other by a narrow canal. Then they hollowed out a second piece of clay just like the first piece. They tied the two pieces of clay together. Next, heated bronze was poured between the two pieces of clay. After the bronze cooled, the pieces of clay were untied. Then the finished arrowheads were taken out.

Animals of stone Shang craftsmen also knew how to work with stone. They carved beautiful sculptures out of jade and marble.

Jade is not easy to work with. It is a very hard stone. It cannot be cut with simple tools. But Shang craftsmen were able to carve jade into many shapes and sizes.

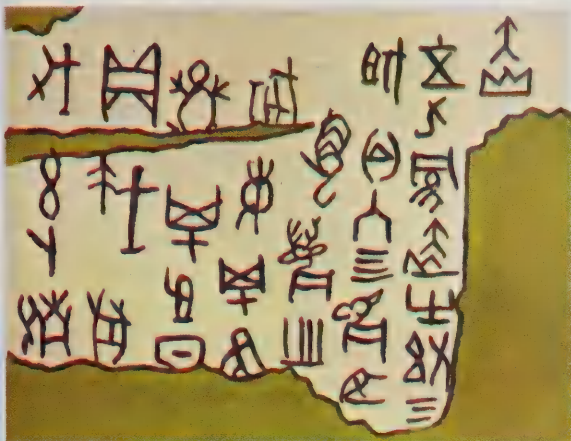
Shang sculptors used jade to carve animals and birds. Look at the pictures on page 81. They show carvings of animals and birds. Do these carvings look like animals and birds?

SHANG WRITING

After studying Shang metals and tools, archaeologists turned to the strange oracle bones found at Anyang. They wanted to learn more about the writing on these bones.

Reading the cracks Archaeologists discovered that most of the Shang writing was in the form of questions. All of the questions were about the future.

Suppose you are a Shang warrior. You are about to go to war with a neighboring tribe. You want to know how the war will turn out.



So you go to a diviner. Diviners were a special class of Shang people who knew how to predict the future. They were something like fortune-tellers of today.

You would ask the diviner your question. Then he would write the question on a piece of bone. He would heat the bone over a flame until it cracked. The size and shape of the crack would tell the diviner the answer to your question. As a Shang soldier, what questions would you ask the diviner?

◆ dā yīn' er

◆ Why do you think people go to fortune-tellers today? Why do you think Shang people went to diviners?

1. What is an old name for China? Why was it called that?
2. How old is Chinese civilization?
3. Who were the Shang? When and where did they live?
4. What are "dragon bones"? Why are they so important to archaeolo-

- gists? Where were they found? In what modern province is this city?
5. Were the people of Shang warlike? How do we know they fought a lot?
6. How did the Shang people live on their land? What did they eat?

ties did the Shang people have? Did they begin to develop arts and ways of life that became important parts of Chinese civilization?"

Activities

Have the class make a list of five weather questions that they, as Shang, would like to ask a diviner. The weather questions must be only about weather in the Yellow River Valley.

2. Tell the pupils to write a few paragraphs of the autobiography of a Shang king. Tell the class to include just the highlights of the king's life.

Answers (p. 83)

1. An old name for China is *Chung Kuo*. China was called the Middle Kingdom because the Chinese thought of their country as the center of the world, both geographically and culturally.
2. Chinese civilization is about 4,000 years old.
3. The Shang were a people of northern China who developed an advanced way of making bronze and a system of writing. The Shang lived from about 1700 to 1100 B.C.
4. "Dragon bones" were really oracle bones—animal bones used by the Shang to foretell the future. Oracle bones are very important to scholars because they led to the discovery of the Shang people and their achievements. They were found in Anyang in Honan province.
5. The Shang people were a warlike people who fought with bronze weapons. Many of their weapons were put into the tombs with the Shang for use in the afterlife.
6. The Shang people were both farmers and hunters. They ate millet and wheat, many kinds of vegetables, and game.

LESSON 4 (pp. 84-90)

Lesson Objectives: Knowing that modern China has more people than any other country in the world. Understanding that the economy of modern China is based on communes.

Lesson Skills: inferring, reading maps, "reading" pictures, analyzing information, comparing and contrasting

Introduction

Have the class look at the picture on page 84. Compare it with the picture on page 66. Explain that both pictures show modern China. Ask: "What does the word *modern* mean?" Tell the pupils it means belonging to the present or having up-to-date attitudes, ways, and methods. Ask: "Why is the picture on page 84 symbolic of modern China? Are the Chinese using modern tools in the picture? Why do people use modern tools? Do modern tools make people's work easier? Can people make things with them that they have not had before?" Next, have the pupils look at the picture on page 85. Ask: "What can you tell about modern China from this picture? Would you see as many adults riding bicycles in the United States? How do Americans usually travel? What does this tell you about China today?"

Modern China





China has changed a lot since the days of the Shang dynasty. It has had several different types of government. Today, it is a country of 800 million people. That is almost four times as many people as the United States has. In fact, almost one out of every four people living in the world today is Chinese.

For many years, people in the United States knew very little about modern China. This was because the governments of both countries did not allow Americans to visit China.

But today more and more foreigners are being allowed to visit China. They have gone back to their own countries with important information about this mysterious land. In this unit, you will read some reports by foreign journalists who have visited China. As you read their reports, compare what you learn about China with your way of life in the United States.

Not many people in China can afford cars. Even in the big cities, people ride to work on their bicycles. In the villages, most people use carts and wagons pulled by animals.

◆ A journalist (jer'nl ist) is a person who writes for a newspaper.

Lesson Development

Tell the class to read page 85. Give the pupils the following figures and tell them that they show how many people each of these countries has. There are about 4 billion people in the entire world.

China—800 million

India—600 million

U.S.S.R.—250 million

U.S.—210 million

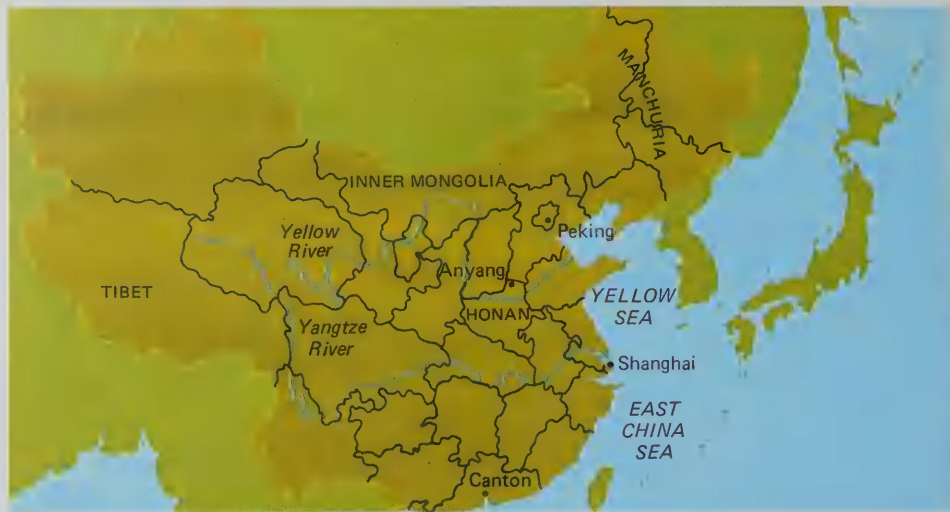
Canada—22 million

Ask: "Which country has more people than any other in the world? Does China have more land than any other country in the world? Do you think China is crowded?"

Make sure the class understands that there are two Chinas. This unit tells about mainland China. Inform the class that Chinese on the island of Taiwan also call their country China. Neither government recognizes the other.

Ask: "Does anyone know why Americans were not allowed to visit China for so many years? Do you know why many Chinese left their country? Do you know why those who left did not return to their country to visit it?" Explain that the United States had supported the government that is now on Taiwan. Once this government had ruled mainland China. It was forced to leave the country. When this happened, the United States felt it had to keep on supporting the government on Taiwan. Mainland China was angry at the United States for supporting the government on Taiwan. Also, the government of mainland China was developing a way of life that was very different from that of the United States.

Ask: "Why are visitors from the United States allowed to travel to China today?" (The U.S. government no longer gives full support to the government of Taiwan.) Instruct the pupils to read page 86. Tell them that until not very long ago, China did not have modern machines, enough railroads, paved roads, or enough industry. Also the Chinese people did not think of themselves as a nation. They thought of themselves as Chinese people, but their loyalty was to their villages and regions. Ask: "What does it mean to be a good citizen of the United States? Do you have to obey the laws of the country? Should you want to vote? Do you want to help your country? Does your well-being depend on the well-being of the country?" Explain that until about 45 years ago, the Chinese people did not think of themselves as Chinese citizens. The country had few written laws they had to obey. People did not vote. The family was still the most important group in China. It controlled people, fed them, and demanded loyalty. Ask: "Was local government more important than the national government? Why? Why did people keep living in small villages for so long in China? Is China a big country? Would it take a long time to get from one part of China to another without modern means of transportation? Would China's geography keep people isolated in villages along hills and valleys? Why would people feel that the government in Peking was far away?"



► Find Shanghai on the map above. Why does its location help make Shanghai one of the most important ports in China?

► mau' dzə dūng'

A PROUD PEOPLE

Today, Chinese people call their country the People's Republic of China. Through cooperation and hard work, modern Chinese people have made their country one of the strongest nations in the world.

The following story is an ancient Chinese legend. It is one of Mao Tse-tung's favorite stories. Mao Tse-tung is the leader of the Chinese government.

The Foolish Old Man

Once upon a time there was an old man who lived in northern China. He was called the Foolish Old Man of North Mountain.

His house faced two giant mountains that were so huge they blocked his view. So the Foolish Old Man decided to dig up the two mountains. He got his sons to help him.

As they began to dig, another old man saw them. His name was the Wise Old Man. The Wise Old Man said to them, "That is a very silly thing to do. Three people cannot dig up these two huge mountains."

Then the Foolish Old man answered him. "When I die, my sons will carry on the work; when they die, their sons will do the work; and so on. The mountains are very high. But they cannot grow any higher. And every bit we dig up will make them a little lower."

The Foolish Old Man went on digging every day. God was moved by his hard work and sent two angels down to earth. The angels carried the mountains away on their backs.

Was the Foolish Old Man really foolish? Why or why not? What is the point of this story? Why do you think this is one of Mao Tse-tung's favorite stories? Explain what you think this story means to the modern Chinese.

WORKING ON THE LAND

Most modern Chinese people are farmers. They grow crops such as rice, tobacco, corn, cotton, and wheat. Rice and wheat are China's most important crops. In fact, no other country in the world grows as much rice as China does.

Although China grows many crops, there are not many acres of good farmland. Most of China is too dry or too mountainous for crops.

China also does not have many modern farm tools, such as tractors. Most Chinese farmers depend on the muscles of people and animals to do all of the work in their fields.



Tell the class that the government of China had to teach people they must obey the national government. Ask: "Why is it important for people to feel that they are an important part of a country? that their well-being depends on that of the central government? Is a divided country a weak country? Do people have to work together and cooperate in order for the country to grow and remain strong? What can a strong country do for its people?"

Tell the class to look at the map on page 86. Have them suppose that the government wants to build a railroad from Canton to Peking. Ask: "How many provinces will the railroad go through?" Suppose one province does not want the railroad. Does the national government have to have co-operation from the states? How does your government get people to cooperate? Why is voting so important?"

Have the class read the extract on pages 86-87. Ask: "Why does Mao think the Chinese people are like the Foolish Old Man? Do you think China has many modern tools? Does it have enough natural resources?" Have the class find a map of China's natural resources in an atlas. Ask: "What are China's most important resources? Does it have much petroleum and iron? How did China become a strong country?"

Tell the class that Mao Tse-tung told this story while giving a speech to the nation. Ask: "Do leaders in the United States tell stories like this one? Do they tell you that everyone must work hard, cooperate, and do things they might not want to do? Do they tell you that if you work hard, you may become President, a famous singer, or whatever else you wish to be? Do they give you examples of people who have succeeded? Is it important for leaders to set people a good example? to try to bring out the best in people?"

Ask: "Is the description of Chinese agriculture on page 87 much different from that of agriculture in the past? Do you think it will be easy for China to grow more food? Does China have too many people? Why did farmers in the past want big families? Does China need big families today? Why do you think the Chinese would want to change the way the land is farmed?"

Instruct the class to read the section on communes, on page 88. Make sure the class understands what communes are. The word *commune* comes from the Latin word *communis*, meaning "a group of people who own or use property in common." Members of the commune do not believe people should own things like land, businesses, or services individually. Ask: "Who runs the communes in China? Who tells people what to grow and what to do with what they grow? Does the government in the United States tell farmers what to grow or what to do with it? Does it ever subsidize farmers, or pay them not to grow certain crops? Why? What would too much of a crop do to farmers? Would farmers get less for their crops?"

◆ kām' yünz

◆ wāng dīng' dung

◆ Gruel (grü' əl) is a thin cereal.

Communes In 1958, the Chinese government set up a new system of agriculture. In that year, the government took over all of the land, farm animals, farm tools, and crops. Large farming communities called **communes** were set up. One commune usually included 10 or 15 villages. It also included all the land that was worked by the farmers of those villages.

Today, the government tells the Chinese farmers what kind of crops to grow. All farmers have to work together in the commune fields. Farmers are not the only people who work the fields. In China, students, too, must work part of the year in factories or on farms.

The Chinese government buys the crops grown by the communes. The government pays the farmers a monthly salary for their crops.

What was life like for poor farmers before communes? Why did China decide to have farmers work the land together?

Before the commune system In the following story, a Chinese farmer describes his family's way of life before the commune system.

We have always been farmers. But we did not have our own land. We rented it. For almost 80 years, we rented the same land. The landlord's name was Wang Ting-tung. When I was a child, I worked at home. When I was 14, I went out to work for Wang Ting-tung. I was not given any wages, but I got my food. Three meals a day, millet gruel, and "sticky millet" bread. The landlord lived in the town. We had an ordinary earth cave.



Chinese farmers must work very hard to grow enough food to feed everyone. Only one-fifth of the land in China can be farmed. The rest is too dry or too mountainous. Women must work in the fields with the men. These farmers must take good care of their land. Sometimes they must farm on the sides of steep hills. When China's food crop is too small, many people go hungry. Then China must buy food from other countries.



Instruct the class to read "Before the commune system" on pages 88-90. Ask: "Did landlords live differently from the farmers? Why did the farmers hate the landlords? Could people go to the law courts and get help against landlords? Is the setting in the story northern or southern China? How can you tell what part of China it is?"

Have the pupils look at the pictures on page 89. Tell the pupils that they show a commune in northern China near Peking. People show up for work every morning. They work in brigades, or teams. Ask: "How is this different from farming in the old days? Do you think the teams grow more food than the villagers did before? Who pays farmers' salaries in the United States? Do the people in the pictures look as if they get enough to eat? Is it necessary for people in the United States to form teams to work the land? Why not? Do American farmers use the tools shown here? Do owners of big or small farms use the tools on this page? Are there many farmers in the United States? Are there still people here who form teams to work? Why do construction work and building, laying pipes and such kinds of work need teams of people? Why do the Chinese still work in this way? Does China have other kinds of jobs for people? Does it need to become a richer country, making more kinds of goods? How does a country become richer?"

Activities

1. Have the pupils hold a debate on the advantages and disadvantages of entering the modern world. Divide the class into two groups. One group will be traditional Chinese and should defend the old ways and the advantages of the village and family system. The other group will be the modern Chinese. Have them explain why China must become modernized and why the old village system must go.
2. Have the class find books in the library showing Chinese art. Point out the traditional landscapes to the pupils. Tell the pupils to draw a similar kind of landscape picture but to include modern parts of the scene, like communes, teams of farmers at work, bicycles, and so on.

LESSON 5 (pp. 90–95)

Lesson Objectives: Understanding that communes are self-contained communities. Understanding what life is like for the people who live in communes.

Lesson Skills: inferring, analyzing information, comparing and contrasting, “reading” pictures, observing

Landlords did not eat as we others did. They did not do physical work, and they ate meat and vegetables every day. There were seven or eight persons in Wang Ting-tung’s family. He was a very mean person. He made you give back the smallest coin you owed him. He was hard. If people could not pay, he punished them. He did not hit you, but he took away your land.

When I was 18, I began working with Father in our fields. People hated the landlords, but there was no way of getting around them. “As long as we have our daily food, we must be satisfied,” people said. “We must do what our masters say. They own the land and the oxen.” Everybody owed Wang Ting-tung money. And as long as you owed him money, you could not leave the village in order to look for another landlord.

How did this farmer feel about his way of life? How did he and his family feel toward their landlord? Do you think this was a good way of life? Why or why not?

Life on a commune The following description of life on a Chinese commune was written by a German journalist.

The Yellow Clay Hill People’s Commune

The commune that we visited was founded in 1958. It was made up of a series of villages.

We visited only two of the villages. I was shown the following:

First, a chicken farm. The chickens were kept in low clay buildings. Each building was about 100 yards long and could hold about 1,000 chickens.

Second, greenhouses. The buildings were heated. I was shown how cucumbers were grown. The commune sold greenhouse vegetables to Peking.

Third, a store. The store was a bright room with a sales counter and shelves along the walls. There were many different kinds of goods: clothing, shoes, candy, canned goods, and fruit.

These buildings belonged to the village. There were other buildings that belonged to the commune. They included:

The hospital. The hospital was set off by itself, and was surrounded by fields. It was only a few years old. The commune pays for the cost of running the hospital out of its own earnings. Each member of the commune pays a yearly fee to the hospital.

My next visit was to a middle school. The school had 460 students and 30 teachers. A relay race was being held on the playground. I saw three classes. One was a math class where the students were busy with fractions. In a workshop, students made shovels out of heavy tin. The shovels were sold in the city.

I saw only one big workshop. In it were 22 machines. Then I saw a mill where wheat and corn were being ground up. The members of the commune had built the mill themselves. It was run by electricity.

Finally, I saw a tractor factory. A few workers showed us rows of tractors and trucks, and also a jeep made in China.

... Seven hundred workers, all of them from the commune itself, worked in the factories.

I asked my host at the Yellow Clay Hill a few questions. First, I asked about the wages of the commune members.

◆ A greenhouse is a special building for growing plants.

◆ In China, a middle school is a junior high school.

Introduction

Bring into class as many pictures of modern China as you can find. Try to cover as many facets of Chinese life as you can. Point out that the modern Chinese have not discarded everything about the past. Show old and famous buildings, old methods of exercising (such as *T'ai Chi*), acrobatics, and the Peking Opera. Point out, though, that many themes are new. Ask: "Do the Chinese have new heroes? Who would be the hero of a commune? Do movies, television, and plays ever show new kinds of heroes in the United States? Did many movies show people traveling around in space ships 30 years ago? Do new ways of life produce new heroes?"

Lesson Development

Tell the class to read "Life on a commune" on pages 90-92. Ask: "How has farm life in China changed with the coming of communes? What do communes do for people? Do people live better now than they used to? Would you like to live in a commune? Why or why not? Have the Chinese had the same experience of living in cities, making their livings in many different ways, voting, and being responsible for their own lives that people in the United States have? Would communes work in the United States?"

Ask: "Do people who live in agricultural communes have to go to the cities for education or to enter the hospital? Do you know anything about Chinese medicine? Do you know what acupuncture is?" Find some information on acupuncture and tell the class what it is. Tell the pupils that the Chinese have practiced acupuncture for hundreds of years. It often works; even now, no one knows quite how it works. Ask:

"Can people today sometimes learn things from old methods? Can people be modern and still keep things of the past?"

Ask: "Do you think the Yellow Clay Hill Commune is self-sufficient? That is, do you think they have everything they need in order to live? What is the difference between a commune and a town? Does everyone in a town pay a fee to the hospital? How do hospitals in the United States get their money to run things?" Explain about taxes and federal aid. Ask: "Do students in our school make things to sell in the city? Why not? Why does the Chinese government want students to work on the farms part of the time?" Tell the class that students and scholars were a privileged class in the past. They did not have to do any manual work. Today, the peasants and workers are considered the most important people in China.

Ask: "Do you think people in China feel closer to their communes than people in the United States feel to their towns and cities? Do you think it is easy for the Chinese people to leave their communes? to go to another commune and work? Do you think the family system is as important to the commune as it was to the old villages? Do you think the Chinese make many of their decisions by 'discussing' them?" Explain that China has only one big political party. It is important to belong to that party. Ask: "How do people who have only one party make their wishes known to the central government? Does the central government encourage people to hold different opinions from its own? Do you think the government thinks this is a 'luxury' they cannot afford? Why?"



There are pictures of Chairman Mao in schools, factories, and stores all over China. Workers take breaks to study his ideas. Schoolchildren join political clubs and march in parades.



"The workers in the commune factories get between 30 and 50 yuan (about \$13 to \$22) a month. A teacher and a doctor each earn 40 yuan (about \$18). Agricultural workers get between 300 and 400 yuan (about \$132 to \$176) a year."

"How do you decide a person's wages?" I asked.

"We discuss them."

Do you think this is a good way of life? Why or why not? How is it like a farmer's way of life before the commune system?

FACTORIES FOR THE FUTURE

Agriculture has always been very important to China's economy. But in the early 1960s, the Chinese government decided to make industry important, too.

Factories were built all across China. These factories made iron, steel, tools for machines, chemicals, and cotton cloth.

Today, there are still many more farm



workers than factory workers in China. But factory workers get paid more than farmers.

A factory worker Many factory workers live in communes just like farm workers do. These communes are very like the farming communes. But they are usually in or near cities.

Some factory workers, however, do not live in communes. They live in apartments like many workers in the United States.

The following is a description of a Chinese factory worker's way of life. This factory worker lives in Peking. The date is 1972.

The worker, Chou Chieh-hua, is 39 years old, and five foot eight. He is a pleasant-looking man who was dressed in a blue cap, tunic, and trousers. He is foreman of a crew of ten men who deliver and fix machines.

Mr. Chou earns 71 yuan (\$31.24) a month, and works a six-day, 48-hour week. He and his family live well, and save money because three others in the family also work.

◆ Peking (pē king') is the capital of China.

◆ jō jye' hwa

Have the pupils read the rest of page 92 and the first part of page 93. Ask: "Why do you think factory workers are paid more than farmers in a commune? What are factories doing for China? Will they provide new jobs for people? Will they allow more people to leave farms? Who made tools, carts, houses, clothes, and so on, before the start of factories in China? Do you think Chinese factories have already replaced many of the old craftsmen? Why do you think some factory workers do not live in communes? Is it easy to build a commune in an old crowded city?"

Have the class read about the life of the factory worker on pages 93 and 95. Ask: "How much more does Mr. Chou earn than workers in agricultural commune factories? How do Mr. Chou's family spend their money?" Tell the class to make a monthly budget for Mr. Chou. Have the pupils' parents help them make a similar budget for their own household. Compare the two sets of budgets and discuss them in class. Ask: "Why do most things cost so much more in the United States? Are salaries of workers high in the United States? Do people here pay more taxes? Do the Chinese pay taxes? (no) Do as many people handle products from the factory or farm to the store in China?" Tell the class that these people are called middlemen. Ask: "How does the life of a factory worker compare with that of a farmer? What does the story of Chou Chieh-hua tell you about Chinese life? How does it compare with city life in the United States? Do the lives of most people who work in factories in the United States center around the factory?"

Have the pupils look at the pictures on pages 92 and 93. Ask: "What do they tell you about Chinese life? Are people constantly reminded of Chairman Mao? Are people in the United States reminded of their President in the same way? Would you like to have more pictures of the President displayed over the country and in all the stores and schools? What is the Chinese government doing to make the Chinese people feel loyal to the central government? to its leaders? Why do you think people march in so many parades in China?"

Tell the class to look at the pictures on page 94. Ask: "What do you think it is like to go shopping in China? Do you think China has many big department stores? Do you think most Chinese buy their clothes or make their own? Do people wear fancy clothes and jewelry in China? Can the Chinese afford to spend money on luxuries if they need to save money for new industries, new equipment, schools, and so on? Do you think China is succeeding in becoming modernized? Is it helping its people at the same time? Do you think the day will come soon when people will no longer be tied to the land in China? Do you think tractors and new machines will do most of the farming and people will be free to hold many different kinds of jobs?"

Activities

1. Have the class prepare a bulletin-board display on modern China. They should include pictures on as many facets of life as they can find. Tell the class to include drawings and poems they have made themselves.



There are many stores in the big cities of China. The people are able to buy more things than they could in the past. Still, China's factories cannot produce all the things the people want, and many goods are still made by hand. But China's industry is growing stronger. China was once called a "sleeping giant." Do you think this will be true in the future?



The family lives in an apartment that is half a mile from the factory. The apartment has very simple furniture. It has two small bedrooms with tiny balconies, a kitchen and a bathroom. The family pays 7 yuan (about \$3.00) a month for the apartment. Electricity for lighting and gas for cooking, central heating and hot water costs 1 yuan (about 44 cents) a month.

Food for the family costs about 10 yuan (about \$4.44) a person. At the end of the month the family has 59 yuan (about \$26.00) to buy other things or to deposit in the people's bank. Prices are high—a simple cotton tunic costs 6 yuan (about \$2.65) and a wristwatch about 110 (about \$48.00). So the family does not buy much.

The Chous eat pork or beef at least once a day. They usually have one meal a day at the factory.

The Chous' family life is built pretty much around the factory. There they see movies which compare the "bad old days" before Mao Tse-tung with their present life. For at least half an hour a day, the family studies the works of Chairman Mao.

Is the way of life of this Chinese family anything like the way of life of your family? Which things are the same? Which things are different?

1. What do the Chinese call their country today?
2. Who is Mao Tse-tung? Does he believe the Chinese should work hard? Why?
3. What is a commune? What kind

of buildings does a commune have?

4. What was life like for farmers before the commune system?
5. Do city workers live in the same way as the farmers on communes?

2. Have the pupils imagine they are taking a train ride from the north to the south of China and spend most of their time looking out of the window. Tell the class to describe what they feel and think as they watch the changing countryside and the different sights as they pass by.

3. Tell the class to choose one of their favorite heroes or heroines and draw a picture showing what about that person they admire or what that person has done to be admired. Discuss the pictures in class. Point out that Chinese schoolchildren would probably all have drawn pictures of Mao Tse-tung. Point out how differently children in the United States make their choices.

Answers (p. 95)

1. Chinese today call their country the People's Republic of China.

2. Mao Tse-tung is the leader of the Chinese government. He believes that the people must work hard to modernize China. Hard work is needed because China does not have many natural resources, and the Chinese do not want financial aid from other countries.

3. A commune is a group of people who own and work in common. Communes have schools, public buildings, hospitals, factories, stores, nurseries, and farmhouses.

4. Before the commune system, many people starved, worked for little or no wages, and were in debt to landlords.

5. City workers do not live in the same way as farmers on a commune. They live in apartments, shop in city stores, and build their lives around the factory.

INVESTIGATING THE UNIT

Gathering Information

Find out more about ancient China from the museum or library. As you find out, ask yourself the following questions. Did China have an advanced technology? What kinds of tools did the ancient Chinese use? Did they write great books or beautiful poems long ago? Are all of these things important to a civilization?

Grouping Information

China is mainly an agricultural land. But it also has people who make their livings in different ways. Find out about the other people of China from library books or encyclopedias. Find out, for example, whether there are any people who herd animals for a living. Does China have people who live in the desert? on high mountains?

After you have discovered who these people are, see if you can find out whether their language, food, housing, and customs are the same as those of most Chinese. Put the people who have many things in common with the Chinese in a group. Are there many people in China who are different from the majority of Chinese?

What Does the Map Tell You

Look at a map of modern China. Find the following large cities:

Canton	Mukden
Chungking	Peking
Fushun	Shanghai

Now draw a circle on the map where each city is located. Are the cities near a river or the coast? Does that help explain why so many people settled there? Do you need more information before you can answer this question?

Using What You Have Learned

Divide your class into two groups. One will be a family who lived in China before the commune system. The other will be a family in modern China. Have each family member of the two groups ask the oracle a question. It should be about some big problem they have. Did the groups ask the same kinds of questions?

Comparing and Contrasting

Compare the salary of Chou Chieh-hua with that of commune workers. Why do you think he earns more? Does it cost more to live in a big city than in the country? Is this true in your country?

UNIT 4

READING LESSON: COMPREHENSION— IDENTIFYING THE TOPIC SENTENCE

Purpose

The pupil who reads with his attention on the topic sentence in each paragraph will learn to remember the important information and will not be distracted by details.

Introduction

Say: “Imagine that you brought an umbrella to school today, but no one else did. This afternoon you and your friends are on the way home, and it starts to *pour*! What happens? (Everyone crowds under the umbrella.) About how many people can fit under one umbrella? (four or five)

(Draw an umbrella on the board.) “Paragraphs are usually made up of four or five sentences all stacked up under an umbrella sentence. (Stack the word *sentence* several times under the drawing of an umbrella.)

“The trick is to see if you can figure out what the umbrella sentence is. It is a sentence that ‘covers’ all the other sentences—every other sentence is connected to it in some way.”

Development

Pass out papers with the following paragraphs (taken from Unit 4) on them. Or use the text itself (page numbers are indicated).

Have pupils read the paragraphs and discuss which one of the sentences “covers” all the others. Pupils will need to discuss the meaning of each sentence.

(Page 118, paragraph 1) The Norwegians still depend on the sea. (Topic) Fishing is a very important industry in Norway today. (Detail) The Norwegians still build many ships. (Detail) In what way are Norwegians most like the Vikings of old? (Summarizing question)

(Pupils should be able to perceive the first sentence as the “umbrella” or topic sentence, the two following sentences as a breakdown of the topic

sentence, and the last as a question which calls for a summarizing statement from the reader.)

(Page 116, paragraph 1) Today we know little about the Vikings in North America. (Topic) Scholars are still guessing about them. (Detail) Some are not even sure that the Vikings reached North America. (Detail) Whatever they know about the voyages of Leif and Bjarni comes from Viking sagas. (Detail)
(Pupils should conclude that the “umbrella” sentence is usually first and that sentences giving details follow. Develop the terms *main idea* and *topic sentence*.)

Application

Ask pupils to write down the topic sentence in every paragraph on pages 117–119 inclusive. Check for accuracy.

To dramatize the importance of the topic sentences, show pupils how they can combine these with the boldface topics in the text to make an effective summary of what has been read. This is an important study technique.

The End of the Viking Age

Around 1050, the Viking age ended.

Modern Scandinavia

The way of life in Scandinavia has changed a great deal since Viking times.

Norway and Sweden

The environment of Scandinavia has changed very little since Viking times.

There are still thick forests in many parts of Norway and Sweden.

The Norwegians still depend on the sea.

Denmark

Most of Denmark is still flat.

Danish butter and cheese are sent throughout Europe and the world.

New ways

The most important Scandinavian industries are based on forest products, fishing, furs, and mining.

Too little land

Land is still very important to the Scandinavians.

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POLLAND, MADELEINE A. *Beorn the Proud*. Ill. William Stobbs. N.Y.: Holt, Rinehart and Winston. Beorn, a ninth-century Viking who is heir to his father's throne, overcomes his arrogant attitude with the help of an old warrior.

READING LESSON PLANS

THE VIKINGS AND THE INCAS

In the realm of the Sun
Grew a city of gold.
But the wealth of the north
Was the sea, dark and cold.



Knowledge Objectives

Understanding that the Vikings were a military aristocracy of Scandinavia based on seapower.

Understanding why the Vikings took to the sea and why they became great shipbuilders and sailors.

Knowing that Vikings were also explorers, traders, and colonists.

Knowing that the Viking Age ended when the Vikings settled down to a peaceful way of life.

Understanding that the Incas developed an advanced way of life in the Andes Mountains.

Knowing how the Incas built their empire and ruled it.

Knowing that the Spanish conquered the Incas in the 1530s, bringing an end to the Inca way of life.

Value Objectives

Appreciating the spirit in which the Vikings explored the unknown.

Appreciating how the Scandinavians have contributed to European and world culture.

Appreciating the way in which the Incas built a civilization in a difficult environment.

Appreciating the organizational and engineering skills of the Incas.

Skills

Comparing and contrasting two types of cultures.

Reading charts, maps, pictures, and other material to gain information.

Analyzing and evaluating information about the Vikings and the Incas.

Forming conclusions about the information gathered in the unit.

- ♦ vī' kingz
- ♦ skan' də nā' vē ə
- ♦ ing'kə

- ♦ The Andes (an' dēz) are mountains in South America.

- ♦ sēr' pləs

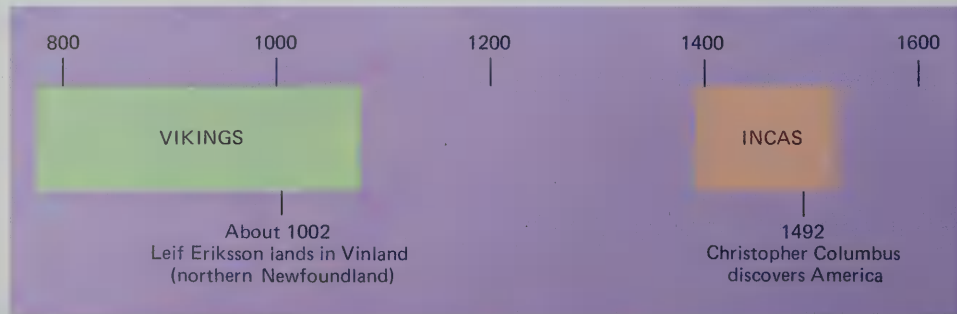
In this unit, you will read about two groups of people—the Vikings of Scandinavia and the Incas of Peru. The Vikings and the Incas both lived in mountainous regions. Both Scandinavia and Peru, where these people lived, are near the sea. But these two groups did not live in the same way.

In Scandinavia, the Vikings turned to the sea for food, transportation, and trade. In Peru, the Incas used the sea very little.

In the Andes, the Incas set up a very strong government. In Scandinavia, the Vikings did not set up a permanent government.

The Vikings did not build any cities in their region, but the Incas were famous for the large cities they built. People build cities only when they have a **surplus**, or extra supply, of food. Does this give you a hint about the differences in their lands?

As you read the unit, try to figure out why the Incas could live in cities and why the Vikings did not. Try to figure out why the Vikings used the sea and why the Incas did not. Ask yourselves why the Vikings and the Incas used their environment in different ways.



The Vikings: A Sea Culture

Lesson Objectives: Knowing who the Vikings were. Understanding that the Vikings were not part of Christian Europe. Understanding why the Vikings took to the sea.

Lesson Skills: hypothesizing, inferring, reading maps, analyzing information

Introduction

Tell the class to imagine they live in a place where everyone respects warriors. They believe that brave fighters go to a special heaven for warriors called Valhalla (väl häll' ə) when they die. Ask: "Would you want to be a warrior if you lived in such a place? Would you try to prove you are brave? What would you do to prove your bravery?" Tell the pupils that in addition to being warriors, the people in this place also want to be wealthy and famous. It is difficult to become wealthy in their own land, but lands nearby are becoming very rich from farming and from trade. Ask: "What would you do to become wealthy and famous? How could you make sure that you will be rich in this life and then go to Valhalla when you die?"

Lesson Development

Tell the pupils to read page 100. Ask: "Why did the Vikings attack Lindisfarne? What does Alcuin's description tell you about the Vikings? How can you tell the Vikings believed in a different religion? Do people usually attack their own holy places? Would the Christians have been shocked at the Viking behavior if they believed in the same religion as the Vikings?" Have the pupils explain their answers.



Ask: "Does anyone know what a saint is?" Inform the class that a saint is a person who is highly respected for his good acts and treatment of others. Some people believe that because the saints are so good, God will listen to them more quickly than to other people. Therefore, people ask the saints to help them or to ask God to help them.

Explain that saints and monasteries were important to the spread of Christianity throughout the world. It was Christianity that later helped the Vikings settle down to a gentler way of life. Christians believed they should teach others about their religion, and so they traveled to new places. They went north from Palestine throughout Europe. Sometimes the Christians were killed or put into prison, but they hoped to win others to their religion by their good example. Eventually they were able to convince some people to accept their beliefs. These people might build special places to live, work, and pray in. These places were called monasteries. Ask: "Why do you think Lindisfarne was thought to be so holy? Why would the attack on this monastery anger people? Does this tell you anything about England at the time? Had Christianity spread far north?" The people of England and what is now France and Germany had already become Christians. Have the pupils look at a map of Europe. Ask: "Where do you think Christianity would enter next?"

Tell the class that the next few pages of the text explain who the Vikings were and why they lived the way they did. Instruct the class to read page 101. Ask: "Do the two meanings of the word *Viking* tell you what a Viking was? What do they tell you? What does

◆ lin' dəs fārn'

◆ A monastery (mon' ə ster' ē) is a building where only monks or nuns live. A monk is a man who gives up everything he owns for a life of religion. A nun is a woman who does the same.

◆ al' kwən

◆ Christians used the word *pagan* (pā'gən) to mean all people who practiced a different religion.

The island of Lindisfarne is just off the north-eastern coast of England. It lies in the North Sea. It was once a peaceful place, famous for its monastery. This monastery, which had been founded by an English saint, was one of the holiest places in all of England.

The Viking terror But in 793, Lindisfarne's peace was suddenly ended. In that year, the island was invaded by the Vikings. They were a tall, warlike people from Scandinavia, which is in northwestern Europe. Look at the map of Europe on page 102. Find Scandinavia. Find the island of Lindisfarne.

The Vikings destroyed the monastery founded by the English saint. They killed many people. They stole whatever they could find to steal.

The Europeans of the time were shocked by what had happened to Lindisfarne. An English writer named Alcuin described how he felt:

... we have never before seen such terror as from this pagan people ... The holy church is filled with the blood of the priests of God. The pagans have robbed all of its treasures. The holiest place in all of England has been ruined by pagan peoples.

Alcuin tells of one big difference between the English and the Vikings. What is it?

Lindisfarne was only the beginning of the Viking terror. For the next 250 years, the Vikings attacked cities and towns all over Europe. They took whatever wealth they found.

WHO WERE THE VIKINGS?

The Vikings lived with other Scandinavian people in northern Europe. But the Europeans knew very little about the people who attacked them. They made up different names for them, like Northmen, White Strangers, and Ashmen.

Today, scholars are trying to find out who the Vikings really were. They begin by figuring out what the word *Viking* means. Most scholars think that it comes from the word *vik*. *Vik* means an inlet of the sea, such as a **fiord** or a bay. Scandinavian pirates used these fiords as hideouts for ships and stolen treasure.

Other scholars think the word *Viking* means “sea warrior who goes on a long trip.” How does a modern dictionary define the word?

Scholars have other ways of learning about the Vikings. One is to study the poems and stories that the Scandinavians wrote down. From them they can learn about the people of old and how they lived.

◆ A scholar (skol’ər) is a person who has much knowledge.

◆ A fiord (fyōrd) is an inlet of the sea that lies between the slopes of a hill or mountain.

the picture on page 101 show? If a Viking was a sea warrior, would that mean that all Scandinavians of this time were Vikings? If it meant ‘people who live in or used fiords,’ would it mean that all Scandinavians were Vikings? In other words, were all Scandinavians sea warriors or pirates?”

Tell the pupils to find a land map of Scandinavia in an atlas. Have them find Norway, Sweden, and Denmark. Ask: “Which country of Scandinavia has the most fiords?”

Explain to the class that it was the Vikings themselves who used the term *Viking*. We do not know what it means because the Vikings did not write about themselves. They memorized their stories and poems and passed them down by word of mouth. Scandinavians in Iceland who remembered these stories wrote them down after the Viking Age ended. By that time they had learned to use the same alphabet as the rest of Europe. Tell the pupils that this does not mean the Vikings did not write at all. They had a form of writing called runes. These runes were used for magic spells, for inscribing weapons, or for noting an important event or deed. Runes were usually carved into stone or metal, not written on paper. The reason that scholars today know some of the places the Vikings visited is that they have found runes the Vikings had carved on stone there. Ask: “What are some of the events the Vikings might have wanted remembered?”

Ask: “Does anyone know where the Vikings lived?” Have the class read page 102 and the first four lines of page 103. Make sure they know that only Norway, Sweden, and a small part of Finland are part of the Scandinavian peninsula.



Tell the pupils that other people besides the Norwegians, Swedes, and Danes live in Scandinavia. A nomadic people called the Lapps hunt and herd reindeer in northern Norway, Sweden, Finland, and a part of northwestern Russia. This area is called Lapland. Explain that although many Lapps have learned Scandinavian ways, they are a different people from the other Scandinavians. The Finns are also a different people and speak a different language from the Norwegians, Swedes, and Danes, whose languages are closely related. Therefore, although Finland is close to Norway and Sweden, it is not really considered a Scandinavian country.

Instruct the class to read the rest of page 103 and page 104 up to "Masters of the Sea." Have the pupils look at the map on page 103. Ask: "Which is the most mountainous part of Scandinavia? Which country has the highest mountains? Which country has more good land for farming, Norway or Sweden? Where in Norway can people farm?" Tell the pupils that less than 4 percent of Norway can be farmed. The two main areas are around Oslo and Trondheim (trän' hām). Tell the pupils to find Oslo on the map. Notice where Norway suddenly gets narrower just below the label "Norway." That is the Trondheim area.

Tell the class that because Norway had so little farmland, its people developed a type of farming called *saeter* farming. They already had it by Viking times, and it is still practiced today. In the summer, farmers move their cattle to higher land to graze. The lower land is then planted for crops.



THE LAND AND CLIMATE OF SCANDINAVIA

◆ A peninsula (pen in' sēlə) is land that is surrounded on three sides by water.

◆ Culture is a people's way of life.

Scholars know that the Vikings came from Scandinavia. Scandinavia is a large **peninsula** in northwestern Europe. Look again at the map above. What countries are on the peninsula?

A shared culture The country of Denmark is not part of the peninsula. But it is still part of Scandinavia. This is because the people of Denmark did many things in the same way as the people of Norway and Sweden. They shared the same habits. They spoke the same language. They often used land in the same



way. They cooked their food and made their clothes, houses, and tools in the same way. The Danes, Norwegians, and Swedes had a shared culture.

A difficult land Even though the three Scandinavian countries are close together, they have different types of land and **climates**. One way to find out how different is to study maps.

The map on this page is a physical map. This is a special map. It shows whether a land is high—very mountainous—or low—without mountains. Physical maps often use different colors to show how high the land is. Look at

◆ Climate (klī' mit) is the kind of weather in an area.

When winter comes and it is too cold to keep the animals in the higher land, the farmers bring the animals back down to the main farm. Ask: "Do you think many Norwegians are farmers? Do you think Norway has large or small farms? Why do you think most Norwegian farmers today need a second kind of work?"

Now have the pupils look at Sweden on the map. Ask: "Where are the lowlands in Sweden?" Tell the class that one-tenth of Sweden can be farmed. Ask: "Do you think the Swedes were richer than the Norwegians during Viking times? Did the Swedes need land as much as the Norwegians? Did the Swedes have more towns than the Norwegians?"

Ask: "Is the land in Denmark high or low? How much of Denmark do you think can be farmed?" (Crops are grown on 66 percent of the land and 9 percent is pasture.) Explain that the coasts of Denmark are sandy, and in the southwest there are many marshes. Denmark also has many bogs. Over the centuries, leaves and branches fell into these bogs and formed a plant material called peat. Peat can be used as a fuel, and was an important source of fuel for a long time because Scandinavia has little coal.

Help the pupils look in an encyclopedia and find out why northern Norway and Sweden are called "Lands of the Midnight Sun." Make sure they understand what this term means and why the sun shines all day or does not shine at all for so long during the year.

Tell the class that although Norway, Denmark, and Sweden are far north, their climate is warmer than that of other countries at the same latitude. The reason is that a stream of warm water called the Gulf Stream flows past Scandinavia, warming the land. Therefore, the fiords do not freeze over. Tell the pupils to look at a population map of the world and find out whether other areas in the same latitude have many people living there.

Ask: "Do you think the Scandinavians of Viking times had a hard life? Why didn't Scandinavia have any cities at this time? Could the people grow surplus food? What did people have to do to get more land?" Have the pupils explain their answers.

Activity

Tell the pupils to imagine they are Vikings attending a large fair at which people from all over Europe have gathered. Have the pupils write a few paragraphs explaining how they recognized other Vikings at the fair, and how they were different from other people. Encourage the pupils to use their imagination.

LESSON 2 (pp. 104–111)

Lesson Objectives: Knowing that the Vikings were great shipbuilders. Understanding the different ways in which the Vikings expressed their love of ships and of the sea.

Lesson Skills: reading maps, inferring, recalling, analyzing information, "reading" pictures

► Do you think much of Scandinavia is good farming land? Why or why not? What kinds of things would you need to live in this environment?

► In which areas did most of the early Scandinavians probably live? Why do you think they lived in these areas?

the map again. Is Sweden more mountainous than Norway? Is Denmark mountainous?

Thin soil Much of the soil in Scandinavia is thin. This is because of what happened during the Ice Age. As the thick ice moved through northern Europe, it took with it everything in its path. This included heavy rocks, which scraped away at the soil. When the ice melted, only bare rock was left in most places. Piles of stones were also left behind. Some of these stones are still piled where the ice left them.

There is some good land in Scandinavia. The southern part of the region is warmer than the north. In this warmer region, high mountains rise above the sea. Valleys with good soil cut through these mountains.

Norway's coast The coast of Norway is very uneven. In some places along the coast, fiords run far inland.

But the land along the fiords is very rich. Even in the Viking age, farmers began to use this land for growing crops. They moved their animals to the mountains. The soil there was good for grazing, but too thin for farming.

MASTERS OF THE SEA

Because the Vikings had poor land, they learned to be the best sailors of their time. They were also very skilled in shipbuilding. Their ships—long rowing boats with sails—were probably the fastest in Europe.

The Vikings went to sea for three reasons. First, they went looking for food that the land could not give them. What kind of food do you think they found?

The Vikings also sailed to explore and conquer new lands. They hoped they could find places where they would be able to settle and farm.

The third reason they became sailors was to travel to other countries and trade with them.

Knowledge of the sea How do you think the Vikings sailed all over without compasses or modern instruments? They learned from centuries of experience. By watching the color of the water and the different sea animals, they could judge where they were. They also learned that each place had its own special winds and currents. They used the stars to help them sail from east to west in a straight line. They did this by picking out a special star. As they sailed, they used this star to guide them. They were careful to notice if they moved away from it in any direction.

The Vikings shared their knowledge of sea travel. They made maps. These maps were probably very simple, but they showed the sailors how to reach certain places from their starting point in Scandinavia. With maps, the Vikings helped each other.

Love of the sea and ships The Vikings had very special feelings for their ships. They felt about their ships like many men today feel about their automobiles or about airplanes.

◆ A compass (kum' pəs) is an instrument that shows directions.

Introduction

Have the class look at a physical map of Norway and Sweden in an atlas. Ask: "Would it be easy to travel overland from one part of Norway to another? from one part of Sweden to another? Was it easier to travel overland in Denmark than in Norway and Sweden? Why did the Scandinavians learn to use ships? Why did they need them for transportation? Why did they need them for getting food? Which of the Scandinavian areas needed ships the most? Could the Vikings sail along their fiords all year long?"

Lesson Development

Instruct the class to read the introduction to "Masters of the Sea," on pages 104 and 105. Ask: "Why did the Vikings want more land? Where would you go to get more land if your own country did not have any good farmland left and there was no other way you could earn a living?"

Instruct the pupils to read the rest of page 105. Tell them to imagine they are going for a ride in a rowboat. Ask: "Do you have to know how to row before you go out into deep water? Why? Is it easy to turn the rowboat around in the water? Is it easy to keep it going straight? Is it easy to row in rough water? Do you have to know all about the waves to keep the boat from turning over? Why would you have to know about tides? Do you have to look out for sandbars? What do you have to do to make sure you can find your way back home? Have you ever gone rowing at night? Would you be afraid to go rowing at night? Why? How did the Vikings solve these problems?"

Tell the class to imagine they are going on a boat ride down a river near where they live. Have the pupils make a map of the river and put on it any special landmarks they should notice. Tell the class not to include buildings that are unknown or that most people would not recognize. Discuss these maps in class.

Have the pupils read the feature on pages 106 and 107. It shows the way people lived in Scandinavia during Viking times and earlier. Ask: "What kind of work did the slaves do? Did peasants feel strongly about their land? Why were most farms in Scandinavia far from each other? Did farmers cut their own trees, drain their own marshes, and clear all the stones off their own land? Were they responsible for the welfare of their families and did they have to make all of their own decisions? Would family members feel close to each other? Would they all want to be treated with respect? What happens when two independent, proud, and strong people disagree? What happens if they refuse to give in and there are no law courts and no police? Would the family of a person who was insulted feel as if they had been insulted too?"

Tell the class that Scandinavians of various areas met once or twice a year. They assembled to settle quarrels and to discuss duties and problems of the group. They also exiled people who were troublesome or who had committed a crime. All freemen felt they had a right to go to these meetings, to express their opinions, and to vote on important issues. Ask: "Do you think the early Scandinavians valued freedom and independence?"

THE SONG OF RIG

Here is a story from early Viking times. It tells about the three classes, or groups, of people who lived in Viking times. It is called *The Song of Rig*.

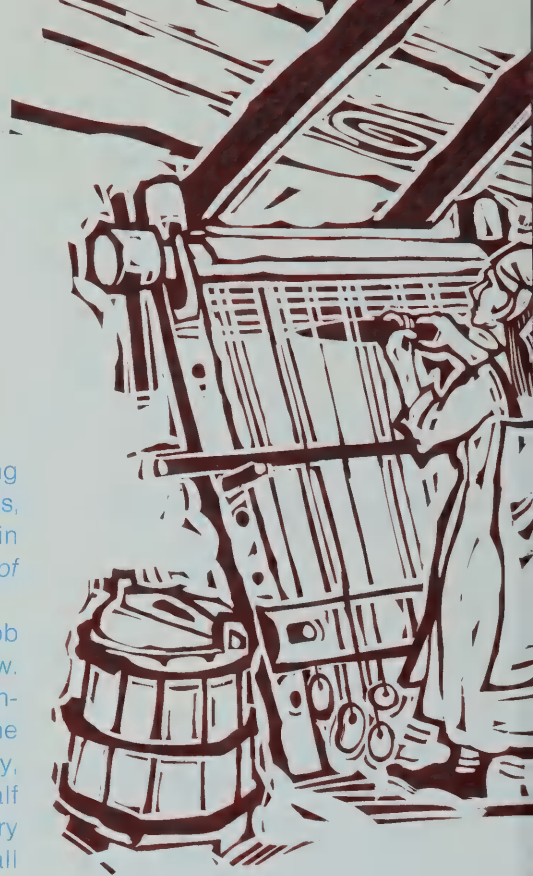
Rig was the god of light. His job was to guard the beautiful rainbow. But Rig did not guard the rainbow all the time. Sometimes he wandered on the earth. One day, Rig saw a cottage with its door half open. Inside, Rig saw an old, hungry couple. They had only one small fire to keep them warm. Rig went inside to meet the couple. They said that they were Great Grandmother and Great Grandfather. They had only a little dry bread, but they shared it with Rig.

The couple had a son. His name was Thrall, which means slave. Thrall was very ugly. His knuckles were thick and his back was bent. Thrall and his many children had the jobs of taking care of the pigs and goats, of building fences, and of finding sticks for making fires. Most of their

work was hard and dirty, but it had to be done.

Later, Rig went wandering again. This time he came to a larger home with a closed door. Inside were Grandmother and Grandfather. They were neatly dressed and were very busy. Grandmother wove cloth while Grandfather made things like looms—machines that weave cloth—and furniture and tools.

The son of this couple was named





Tell the class that a jarl was not only a warrior but a noble as well. The word *jarl* is related to the English *earl*, which even today is a rank of nobility in England. The jarls were the warrior-nobles of Scandinavia. Between 800 and 1050, most of the jarls were Vikings. Ask: "What is a warrior? (A member of a small group of men who fight by hand-to-hand combat. There are not enough of them to take part in a large war.) How is a warrior different from a soldier? (A soldier is a fighter in an army—a large group of men who are trained, organized, and armed for war on land.) What is a sea warrior? How is he different from a navy man? Is a navy like an army except that the fighting takes place on water rather than on land?"

Explain that most warriors feel loyal to their leaders rather than to a country or a people. They feel they should defend their leader, even to death. Ask: "To whom or what do soldiers today feel loyal?" Explain that in return for their loyalty, Viking leaders shared their wealth with their men.

The jarls helped defend their areas from other warriors. They also helped bring in wealth to the area. Not only did they divide up the land they won from others, but they brought in tribute. If a Viking king controlled a particular water route, for example, he could demand that any ship that sailed along it pay him something.

Tell the class that oldest sons inherited everything. Ask: "What happened to the younger sons? Would they want more land and wealth? What happened when there was no more land for them to take in Scandinavia?"

Karl, which means peasant—a poor farmer. He had blond hair, bright eyes, and rosy cheeks. He and his children loved their work. They built their own homes, plowed their land, and started farms.

When Rig went wandering for a third time, he found a very large house with a decorated door. Inside were Mother and Father. Father was bending his bow and making arrows. Mother was smoothing her dress

and putting on jewelry. Flowers made their room smell sweet.

Their son's name was Jarl, which means warrior. He was tall and blond, with pale cheeks and dark eyes. He learned to swim, to ride a horse, and to use a sword.

Describe how the Scandinavians in the poem looked. From what you already know about the Vikings, which group do you think they came from? How was their class different?

Have the pupils look at the picture on pages 106 and 107. Ask: "What material is the house made of? Do you think Scandinavia must have had many forests? How did the Scandinavians cook their food and heat their homes? What did the Danes use for fuel? What tools do you see in the picture? What are the man and woman doing? What group of Scandinavian society is shown?"

Have the class read page 108. Ask: "What kind of life did the Vikings value? What kind of life did young Vikings hope to lead when they grew older? What kind of people do you think the Vikings admired? What kind of people do you admire? What kind of people do your parents admire? What kind of work do your parents tell you that you can do or should do when you are older?"

"What is the Viking in the poem going to do with his ship? Can you tell when an oar is well shaped? What does 'hold her to the harbor' mean? What two skills are praised in the poem?"

Now have the pupils look at the picture on page 108. Ask: "What is the burial mound in the picture shaped like? (a ship) Why do you think the king's graves were shaped like ships?" Explain that kings and some nobles were literally buried in ships. Earlier in Viking history, a dead king or war leader might be placed in his ship, together with his weapons and other possessions, and floated out to sea. In the times spoken of here, the ship was buried in the ground instead. Say: "Compare the woman in the picture with the size of the ship. Was the ship large? Could it hold many men?"

- ◆ The bow is its front end.
- ◆ A galley is a long, narrow ship with oars and sails.

Sweden has many burial mounds like the ones in the picture. According to Scandinavian legend, the large mound is the grave of King Annud, who is mentioned in sagas.

Vikings gave their ships names like *Raven of the Wind*. They also wrote poems about their ships.

The following poem was written by a great Viking poet who lived in the tenth century.

My mother said:
that a ship should be bought for me
with well-shaped oars,
to share the life of Vikings —
to stand up in the bow,
steer the handsome galley,
hold her to the harbor,
and cut down those who met us.

How does the poet feel about Viking ships?





Two Viking ships In 1880, an exciting discovery was made. A farmer in a town of eastern Norway found a Viking ship almost 80 feet long. The ship had been buried in clay. Scientists called it the Gokstad ship because it was found in Gokstad.

Inside the ship they found the bones of a man. He had been over 6 feet tall and about 60 years old when he died. Doctors could tell that he had suffered from gout.

In 1903, another discovery was made. This time it was a 70-foot Viking ship found in Oseberg, Norway. Inside this ship were the bones of two women. One woman had been about 50 years old. The other woman was about 30 years old when she died.



The ship and woodcarving were found at Oseberg. Can you guess what animal this is?

◆ gùk' städ

◆ Gout is a painful disease that affects the joints of the body.

◆ ò ' sə bèrg

Instruct the pupils to read page 109 and the first paragraph of page 110. Ask: "Why do you think these people were buried in ships? Do you think they were important people? Did the Vikings think they would need their ships to take them to their heaven?" Tell the pupils that the man in the Gokstad ship was buried with three rowboats, several beds (many of them carved with animals), horses and dogs, iron pots and pans, weapons, plates, games, and so on. Ask: "Why was he buried with all these things? What can you tell about the man's life from the things found in his ship?" Tell the pupils that scholars think the older woman in the Oseberg ship was the mother of King Harald, the first king to unite most of Norway. Ask: "Why do scholars think these are the people buried in the two ships? What kind of clues do they have?"

Tell the class to read the rest of page 110. Explain that the Viking ships were the end product of hundreds of years of experience in building rowing boats. The Gokstad and other ships were warships. They were built narrow and streamlined to move quickly through the water. The Vikings had several kinds of ships—smaller ones for local use and larger, heavier ones for transporting goods. The Viking ships, especially the warships, had new features. One was the keel. It was made from a solid piece of oak and it was designed to act like a knife in the water, enabling the boat to cut through the water as it moved. The keel also helped to balance the ship. Ask:

"Would the keel help the ship move faster?" Inform the pupils that other European ships of that time would break apart in rough water, but the Viking ships would not. Have the pupils look at the picture on page 110. Tell them that the sides were made of planks, the above ones overlapping the ones underneath. They were tied to the ribs of the ship with roots of spruce trees and whalebone. Planks were hammered to each other with iron nails, and a mixture of animal hair and tar was used to fill in the spaces. Now ask: "What do you think the pole in the middle of the boat was used for?" (the mast for the sail) The ship was steered by the side-oar shown in the front of the ship. This helped to turn the ship and keep it in the direction the sailors wanted to go. Ask: "Where did the Vikings sleep? Did the ships have decks?" Elicit the answer that the ship was tented for rain and for sleeping.

Have the class read page 111. Ask: "Why do you think the Vikings used the design of the sea serpent or dragon? Why didn't they use an ox or a pig, for example? Do you think a dragon was a sign of strength? Do people today often think of their means of transportation in terms of fast, dangerous, or strong animals? What are barracudas, jaguars, mustangs, cougars, and chargers? What are these names symbols of? What kind of cars are those just mentioned?" (sports cars)

Tell the class to look at the picture on page 111. Ask: "What kind of battle weapons did the Vikings use?"

◆ säg' ə

A saga Scientists used a *saga*, or tale, to give them clues about the bodies. The *saga* told of a king from Norway who had gout. When this king died, he was buried somewhere near Gokstad. His stepmother, a queen, was buried in Oseberg. Can you remember another poem which helped scientists learn about the past in Scandinavia?

Shipbuilding Because of the discovery of the Gokstad and Oseberg ships, we now know how skillfully the Viking ships were made. Their ships were watertight and easy to steer. They could be turned quickly even in rough water. They were probably the best ships in all of Europe.

Look at the picture of the ship on this page. How were the oars attached? How was the ship steered? Where did the people on these ships sleep? How did they keep dry during rainstorms?





When the Vikings finished building a ship, they decorated it. Look again at the picture of the ship. What kind of designs did it have on it? Both the prow (front) and the stern (back) of the ship were carved. Sometimes the ship looked like a dragon or a sea snake. The Vikings hoped that these decorations would frighten away evil spirits. Often the designs were made so they could be put on or taken off. The Vikings put them on the ship when they were near enemies in order to frighten them.

The Viking warriors The Viking ships were rowed by fierce-looking warriors. Their leaders, called sea kings, taught them to attack and to escape quickly. They always appeared without warning. As the ships neared land, the Vikings prepared for battle. They would hang their shields over the sides of the ship, put on their helmets, and raise a special, brightly colored flag. They were ready to invade.

► How do you think the people on shore felt when they saw such ships coming to attack them? Do you think the way the Vikings and their ships looked may have helped them win some of their battles?

Activities

1. Tell the class imagine that they are a group of young Vikings exploring Norway's coast. Have pupils write a few paragraphs telling about their life aboard, the sights along the shore, whether the sun shines all day or whether it is dark all day as they travel north, and what dangers (such as whirlpools and icebergs) they encounter.

2. Have the class prepare a bulletin-board display on "Ships of the Old World." Tell them to find pictures of old ships, or books from which they can copy such pictures. The display should focus on advances in ship design, such as keels, rudders, sails, decks, and shape.

LESSON 3 (pp. 112–116)

Lesson Objectives: Understanding that in addition to being warriors, the Vikings were explorers, traders, and colonists. Understanding why scholars think the Vikings may have been the first Europeans to visit North America.

Lesson Skills: inferring, reading maps, analyzing information, observing

Introduction

Have the pupils look at the map on page 112. Ask: "What does the map tell you about the Vikings? Would the Vikings be content to keep on hugging the coasts of Norway, Sweden, and Denmark once they had ships that could be sailed for long distances in rough water?"

Lesson Development

Have the class read page 112 and the first section of page 113. Tell the class that not only did the Vikings now have sailing capability and a desire for more land and wealth, they also wanted a larger share of the growing northern trade. Explain that while the Vikings were learning to build seaworthy ships, trade routes in Europe were changing. About a century and a half before the Viking age began, the center of trade had been around the Mediterranean Sea. Show the class where the Mediterranean is on the map on page 112. Tell the pupils that at this time, Arabs from the Middle East moved westward across North Africa, conquering as they went. They also invaded Spain. Not only did the Arabs gain control of trade around the Mediterranean, but they refused to trade with the Christians. The result was that the Christian trading towns of southern Europe be-



THE VIKINGS IN OTHER LANDS

In some of the countries they invaded, the Vikings set up trading centers. Many of these trading centers grew into important cities. Most Vikings quickly learned the habits of the people they conquered. In most places, they settled down and lived in peace with their neighbors.

Ireland and Russia Vikings set up trading centers in many lands. In Ireland, these centers became large cities like Limerick, Cork, and Dublin. In Russia, Vikings from Sweden be-

◆ A trading center is a place where merchants, sailors, and other people meet to buy and sell goods.

◆ lim'ə rik

came an important part of history. The trading centers they started are also big cities. Some of these are Kiev, Novgorod, and Smolensk. Can you find the Russian cities on the map of Europe on page 112? the Irish cities?

- ◆ kē' yəf
- ◆ nāv' gə rād
- ◆ smō len' sk

England and France When the Vikings attacked Lindisfarne in 793, England was divided into separate kingdoms. The rulers of these kingdoms were too weak to fight the Vikings. One ruler offered the Vikings gold. But the Vikings continued to attack. Finally another king offered them land. The Vikings accepted, and peace returned to England.

The Vikings also attacked France. They

gave to disappear or to become less important. Slowly, European trade shifted north to the towns along the Rhine (rīn) River and the Baltic Sea. Have the pupils find these places on a map of Europe.

Ask: "What do you think the Scandinavians offered for trade? What natural resources did Scandinavia have that people to the south might want?" (ivory; timber; seal oil; amber; furs such as otter, beaver, bear, fox; and honey.) Ask: "What kind of goods do you think the Vikings wanted to trade for?" (luxury goods, such as silks and brocades, gold and silver, glass, finely made weapons, precious stones, and wine)

Ask: "Which of the Scandinavian people do you think went east? Do you think the Swedes had more land to farm and larger farms than the Norwegians? Were they richer? Would people who had more be less interested in raiding? Would they be more interested in trade? Would they have more to offer for trade?" Have the class look at the map on page 112 again. Ask: "Are Kiev, Novgorod, and Smolensk well located for trade with lands to the east of the Mediterranean? How do you think people from Western Europe obtained goods from areas east of the Mediterranean before the Arabs took control of the Mediterranean?" (They traveled south to France or Italy and then eastward across the Mediterranean. Traders from eastern lands traveled west across the Mediterranean to Italy, and so on.) Explain that after the Viking age, people traveled overland. Ask: "How did the trade routes in Europe change before the Viking age and during and after the Viking age?"



Ask: "Which of the Scandinavian peoples went west to raid England and Ireland? What trade centers did the Vikings start in Ireland?" Explain that at first, these posts were both trading centers and military camps from which the Vikings set out on their raids south. Have the class look at the map on page 112 again. Ask: "Where did Vikings go when they sailed south?"

Ask: "Do you have any idea why the Vikings attacked England and Scotland before Germany and France?" The pupils will not be able to answer this question. Explain to them that a king called Charlemagne ([shär' lə mən] which means "Charles the Great") ruled all of what is now France and Germany, Switzerland, western Austria, and the northern half of Italy. His kingdom reached to the southern border of Denmark. The Danes controlled the Danish Peninsula south to the Eider (īd' ər) River. Have the class find these areas on a political map of Europe.

Charlemagne was strong enough to keep the Vikings out of his lands. But he was also fighting them, especially the Danes, for control of the Baltic Sea trade. Charlemagne had conquered and made peace with people right up to the border of what was then Denmark. Have the class look on a map of Europe and study Denmark's location. Ask: "Why were the Danes in a good position to control northern trade?" Tell the class that Charlemagne died in 814. His lands were eventually divided among his grandsons, who were weak. Ask: "Do you think that it was after this that the Vikings began to raid France and Germany?" (Yes; the Vikings sailed down the Rhine and Loire [lwär] rivers to control the wine and salt trades.)



◆ To loot (lüt) is to steal everything.

◆ Why do you think land was so important to the people of Scandinavia? Why would land be more important than gold?

sailed up French rivers into towns and villages, looting and destroying. But when a French king offered them land, the Vikings accepted and settled down.

Iceland and Greenland Ireland, Russia, and England were not the only places the Vikings attacked. They explored the North Atlantic Ocean, fighting storms and rough seas. And they loved it. The Vikings were looking for new lands to conquer, but they also wanted adventure.

In Ireland, the Vikings had heard stories of islands to the north and west where only a few people lived. Some Vikings set out to find them. By accident, they found Iceland and Greenland. The Vikings were lucky they found Iceland and Greenland. Back at home in Scandinavia, strong kings were beginning to unite small areas of land into great kingdoms. The rulers who lost to the kings were forced

to flee. Many went to Iceland and Greenland, often bringing their families with them, to start new lives.

North America Scholars think that an Ice-lander named Bjarni was the first Viking to sight North America. He was trying to reach Greenland but got lost. He came to a mountainous land, but he knew it could not be Greenland. It did not look like a good place to settle, so Bjarni turned back. He finally found Greenland and told the settlers there that he had seen a new land. But they only laughed at him for being afraid to go ashore.

Years later, a Viking named Leif Eriksson bought Bjarni's ship to try to find Bjarni's hilly land. He soon found that Bjarni was right. There was a new land.

Leif went ashore at three different places. First, he landed at Helluland, an empty, icy place. Most scholars think that this is Baffin Island. Next, he landed at Markland, an area of thick forests and sandy beaches. This area was probably Labrador. His third landing was at Vinland (or Wineland). It was a rich land where many kinds of fruit, especially grapes, grow wild. Vinland is the northern end of Newfoundland.

No Viking settlements in North America have lasted. Although the Vikings were fierce fighters, not many of them settled in these strange new lands. Some did settle in North America, but they were attacked by Indians. They were too far from home to send for help and supplies, and most of them died.

◆ byär'ni

◆ hell'ō land

◆ lab'rē dōr

◆ nū'fænd land

◆ Look at the map on page 114. Find Baffin Island, Labrador, and Newfoundland. What continent are these areas part of?

Have the class read about England and France on page 113. Tell the class that the part of England given to the Vikings was called the Danelaw. It covered almost the whole eastern half of England. Tell the class that the part of France that the Vikings were given was called Normandy—from "Northmen." Explain that Normandy was the part of France bordering the English Channel. Ask: "Why would the Vikings want Normandy? Would it be a good place to control trade through the English Channel?" Explain that in return for this area of rich farmlands, the Vikings promised to defend the French from raids by other Vikings. Explain that the Vikings settled down in Normandy to rule well and to build beautiful buildings and churches. However, although the Normans became Christians, their Viking spirit did not die. It was William the Conqueror, leader of the Normans, who conquered all of England in 1066 and changed the history of England.

Instruct the pupils to read about Iceland and Greenland on pages 114 and 115. Ask: "Why was the Viking settlement of Iceland and Greenland different from that of Britain, France, and Russia? Were many people living on Iceland and Greenland? Were these places important trade areas? Why would the Vikings want to go there? Did they start colonies there? Is need for land the only reason people start colonies? Why were the colonies in the United States started? Do you think some of the Vikings who went to Iceland wanted freedom, too? What kind of freedom?"

Have the class read the rest of page 115. Tell them to find Baffin Island, Newfoundland, and Labrador on a map of North America. Ask: "Where in North America are these places? If Leif and Bjarni did not sight North America, what place could they have seen? What other places are there on the map near Greenland and Iceland? Why do you think Leif bought Bjarni's ship? Do you think Iceland had lots of trees for building ships? Why not? Why do you think the Vikings thought that Bjarni did not have the right Viking spirit? Did they think he should have explored the area even if it was not the place he was looking for? Why? Would warriors value other qualities besides bravery? Would they value daring and an eagerness to search for adventure? Would they expect people to go out of their way to find adventure?"

Have the pupils read page 116. Ask: "Why don't scholars know for sure whether the Vikings settled in North America? What does the Vinland map show? What countries does the map show the Vikings knew about? Who were the Tartars? What continents are left off the map? Did the Vikings visit North Africa? Did they know about any countries in Africa?"

Activities

1. Have the pupils pretend they are Vikings planning a voyage or a raid. Tell the pupils to trace the Vinland map and draw on it the route they plan to take.

2. Have the pupils write a short story describing the voyage they made along the route they traced on the Vinland map.

THE VINLAND MAP

Today we know little about the Vikings in North America. Scholars are still guessing about them. Some are not even sure that the Vikings reached North America. Whatever they know about the voyages of Leif and Bjarni comes from Viking sagas.

There is one big clue—the Vinland Map. But scholars are not sure how old this map is. If scholars can prove that the Vinland Map is more than 500 years old, they will know that the Scandinavians were the first Europeans to discover America. This is because Christopher Columbus came to North America in 1492—less than 500 years ago!

Those who believe the map is truly

an old one say that someone copied the map into a book that was being written by hand. This happened in Switzerland. Then, in the years that followed, people forgot about the map.

Centuries later, the map was found. It was first shown in the United States in 1965. The map was called the Vinland Map because of what was written on the top left corner. It says "Vinland Island, discovered by Bjarni and Leif in company." The map actually shows much of the world.

Look at the map. Find Vinland. From this map and what you have read about the voyages of Bjarni and Leif, do you think the Vikings visited North America? What is Vinland called now?



THE END OF THE VIKING AGE

Around 1050, the Viking age ended. There was no more land near Scandinavia to explore and settle. Europeans were learning to protect themselves. They began to join together to fight the Vikings. They built strong castles, which the Vikings could not invade. When Christianity came to northern Europe, most of the Viking invasions ended. People turned away from many of their warlike ways. They learned to become more peaceful. For all these reasons, the seapower of the Vikings came to an end.

How important were the Vikings to the people of Europe? Were they important to the other lands that they explored?

MODERN SCANDINAVIA

The way of life in Scandinavia has changed a great deal since Viking times. Once there were small villages and trading posts. Now there are many large cities. Look at the map on page 102. Can you name some of them?

Norway and Sweden The environment of Scandinavia has changed very little since Viking times. In Norway and Sweden, swift rivers still rush from the mountains down to the sea. Today, these rivers are used for electric power—something that the Vikings never dreamed of.

There are still thick forests in many parts of Norway and Sweden. Today, though, some of the trees are cut down to make lumber. The lumber is used for many different things. What

Lesson Objectives: Knowing that the Viking age ended around 1050, when the Vikings settled down to a more peaceful way of life. Appreciating how the modern Scandinavians have adapted their environment to their needs. Appreciating how the Scandinavians have contributed to European and world culture.

Lesson Skills: comparing and contrasting, reading maps, reading charts, “reading” pictures, analyzing information.

Introduction

Have the class read the first part of page 117. Ask: “Why couldn’t the Vikings continue to settle in or to raid France, England, and Iceland at the end of the Viking age? What happened to the Vikings when they settled in new lands? Did they change their ways? What was happening in Scandinavia itself? Would the men who helped the new kings rule and the traders who had gained new wealth want to keep fighting? Would they want peace? Why? Had some of the Scandinavians become Christians by this time? What happened to belief in the Viking gods with the acceptance of Christianity? What happened to the Viking spirit when they no longer believed in Valhalla and the need to die fighting? Did the Vikings change their values? Did they learn a new way of life?” Explain that the Vikings became part of the larger European culture. They were no longer apart from the rest of Western Europe.

Lesson Development

Instruct the pupils to read the rest of page 117. Have them turn back to the maps on pages 102 and 103 and look at them. Ask: "Where in Scandinavia did most of the Vikings live? Where are most of the cities in modern Scandinavia? Find Oslo, Stockholm, Copenhagen, and Bergen. Do you think Scandinavia's climate limits the places where the people can build cities?"

Ask: "Can you think of any ways that the modern Scandinavians use their environment that the Vikings could not? How did the Vikings use their lumber? What are ships made from today? What were Viking homes made from? What are buildings made from today? How did the Vikings heat their homes? How do modern Scandinavians heat their homes?"

Have the class read pages 118 and 119. Then have them look at the picture on page 119. Ask: "Can you tell from the picture how the Scandinavians use their steep coastline? How can you tell the picture shows a fiord? Do you think the people who live along this fiord also fish for a living? What would be the easiest way to get from the top to the bottom of these hills in the winter?"

Have the pupils go into a large supermarket, or look in an encyclopedia or cookbook, and list as many kinds of Danish cheese as they can find. Ask: "Do the Danes make many different kinds of cheeses? Does your family often eat Danish cheese? Do you think the Danes are well known for their cheese?"

► Find out when paper was invented. When was it first used in Europe? What else can you do with paper besides write on it?

kinds of things do you think lumber can be used for? What is the page you are now reading made of? Why didn't the Vikings use lumber in this way?

The Norwegians still depend on the sea. Fishing is a very important industry in Norway today. The Norwegians still build many ships. In what way are the Norwegians most like the Vikings of old?

Denmark Most of Denmark is still flat. But a large part of the country is rich land. Crops grow on acres of well-planned fields. There are also many fishing villages in Denmark.

Danish butter and cheese are sent throughout Europe and the world. For that reason, Denmark is thought of as the dairy of Europe.

A Danish silversmith polishes silver before sending it out to be sold. Silverware from Scandinavia is known for its modern designs.





New ways The most important Scandinavian industries are based on forest products, fishing, furs, and mining. Scandinavia has many metals to be mined. Its people use iron to make modern machines. They use silver and gold to make some of the most beautiful jewelry in the world. Look at the picture on page 118. The Scandinavians are known all over the world for this kind of silverware, too.

Too little land Land is still very important to the Scandinavians. Even today, only small parts of Norway and Sweden can be used for farming. Most modern Scandinavians live in the same regions that the Vikings lived in. Do you remember where these regions are?

Land along the fiords of Scandinavia is hilly. Yet people farm this land. They know how to keep the soil from being washed down the mountainsides.

Have the class look at the pictures on page 120. Ask: "What sports are the Scandinavians famous for? Are they shown on this page? During what time of year were most of these pictures taken?" Tell the pupils that, the man in the picture on the bottom left is a Lapp. Ask: "Do you remember who the Lapps are? Where in Scandinavia do the Lapps live? Why do you think he is dressed the way he is? What is he doing? Does he live in a cold climate? Do you think parts of Scandinavia are very warm in summer even though it is so far north?" Do you remember why Scandinavia is warmer than other countries that far north?"

Ask: "Why are so many Scandinavians using bicycles? Do they have modern transportation? Do any of the pictures on this page show modern transportation? Do the Scandinavians have many cars? In which country is the Volvo made?"

Tell the pupils to read page 121. Have the pupils explain in their own words what *density* means. Ask: "Is any of Scandinavia densely populated?" Compare the Scandinavian density chart with the one showing the densities of Belgium, Great Britain, and Japan. Ask: "Why is Scandinavia so much less populated than the countries in the other chart? Do you think there are other countries in the world that have as few people as Scandinavian countries?" Have the class look in an almanac or yearbook and find out the densities of some African and South American countries, the United States, Canada, and the Soviet Union.

Explain to the class that the Scandinavians do not want to be more densely populated. Ask: "Why do you think Scandinavians don't want more people living in their lands? Would more people mean less food for everyone? Would it mean fewer jobs? Can the Scandinavians spread out to build more factories and cities? Can they live easily in the north or in the highlands? Would more people mean that the poor would have less? Have the Scandinavians changed much since Viking times? Would the Vikings have made a Nobel Peace Prize available? What kind of prize would the Vikings have given, if they had given a world prize?"



People in all parts of Scandinavia spend as much time outdoors as they can.



We say a country is densely populated when there are many people living within each square mile of it. Look at the following chart.

COUNTRY	PEOPLE PER SQUARE MILE
Denmark	297
Norway	31
Sweden	45

Which Scandinavian country is the most densely populated? Can you guess why this country is the most densely populated?

The following chart shows population densities for three other countries.

COUNTRY	PEOPLE PER SQUARE MILE
Belgium	820
Great Britain	585
Japan	720

Is Scandinavia densely populated compared to these other countries?

Caring for each other The Scandinavians of today are a peaceful and responsible people. They try to see that everyone gets the care he or she needs. Each country provides good medical programs. Each country provides for its aged people.

Activities

1. Have the pupils find out more about the explorations of Sven Hedin, Thor Heyerdahl, and Knud Rasmussen. Tell them to choose one of these explorers. Tell the pupils to explain why the adventures of the explorer remind them of the Vikings and the way the Vikings felt about visiting unknown places.

2. Have the pupils write an imaginary conversation between a Viking and a modern Scandinavian. Encourage the pupils to use their imagination in discussing the differences in daily life, such as the way homes are built, what foods are eaten, and what kinds of clothing are worn.

3. Have the class prepare a bulletin-board display on modern and old Scandinavia. It should show the cities and countryside of Scandinavia; old and new means of transportation; old crafts; and new designs such as tableware, modern furniture, and jewelry.

Answers (p. 122)

1. Scandinavia is in northwestern Europe. It consists of Denmark, Norway, and Sweden.

2. The Vikings were a military aristocracy of Scandinavia based on sea power. They ruled from about 800 to 1050 A.D. Scholars do not know what the word *Viking* means.

3. Scandinavia has different kinds of land. Denmark is flat with marshes and sandy stretches. Most of its land is fertile. Norway and Sweden are hillier and have large areas of bare rock and snow. Norway is the more rugged of the two countries, and its fiords run far inland.

4. The Vikings turned to the sea for food. In some places the sea was also the easiest means of transportation. They sailed to other lands to colonize and to trade.

5. A fiord is an inlet of the sea that runs into the land between two hills or mountains. The Vikings used fiords for transportation and as hideouts for pirates.

6. The Vikings are called "Masters of the Sea" because they were the finest sailors of their time. They used very few sailing instruments.

7. The front end of a ship is called the prow and the back end is called the stern.

8. Limerick, Cork, Dublin, Kiev, Smolensk, and Novgorod all began as Viking trade centers.

9. The Vikings invaded Britain, France, and Ireland. They also went to Russia, the islands of the North Sea and the northern Atlantic, and to Iceland and Greenland.

10. Modern Scandinavians live in the same parts of the country as their Viking ancestors because these are the only parts of the country that can be farmed and that are warm enough for people to live in comfortably.

♦ thōr hī èr dāhl

♦ sven hā dēn'

♦ nūd yō hān rās mūs'ən

The old spirit lives The spirit of the Vikings has not died. Scandinavians still do many of the same things the Vikings did. For example, they love sports and the outdoor life.

Some modern Scandinavians have made exciting and very dangerous voyages, too. Thor Heyerdahl, a Norwegian, built a small boat and sailed almost halfway across the Pacific Ocean in it. He made the boat out of wood and long grass. Sven Hedin, a Swede, has explored the Gobi Desert in Asia. He tracked down mysterious lakes that would disappear and show up in other spots. Knud Johan Rasmussen, a Dane, explored two of the world's iciest places—the North Pole and Greenland. Would you say these modern Scandinavians are like the Vikings?

1. Where is Scandinavia? What three countries are part of it?
2. Who were the Vikings? Do scholars know what the word *Viking* means?
3. What kind of land does Scandinavia have? Is it good land for growing crops?
4. Why did the Vikings turn to the sea? Why did they sail to other lands?
5. What is a fiord? How did the Vikings make use of the fiords?
6. Why are the Vikings called "masters of the sea"? Did they

have many instruments to help them figure out where they were and in what direction they were sailing?

7. What is the front end of a ship called? the back end?
8. Name five big cities of modern Europe that began as Viking trade centers.
9. Name at least three countries of Europe that the Vikings invaded. Did they go anywhere else?
10. Do modern Scandinavians live in the same parts of Scandinavia as the Vikings did? Why?

The Incas: A Mountain Culture

Lesson Objectives: Understanding that the Incas developed an advanced way of living in the high and remote Andes Mountains of South America.

Lesson Skills: comparing and contrasting, inferring, reading maps, recalling, “reading” pictures

Introduction

Tell the class to think about the mountains of Norway and Sweden. Ask: “How would you describe those mountains? Why couldn’t people live in most parts of them?”

Tell the class to look at the map on page 125. Have the pupils find the Andes Mountains. Explain that the Andes Mountains are very different from the Scandinavian mountains. The Andes is one of the longest and highest mountain ranges in the world. It has some of the highest peaks in the world. Also, the Scandinavian mountains are in the cold north, while the Andes stretch north and south of the equator. The equator goes through South America at the area of the mouth of the Amazon. Ask: “Do you think Peru has a warmer climate than Scandinavia? Is it warmer in the Andes although the mountains are high?”



Tell the class that few people can live along Peru's coast. South of the border between Ecuador and Peru, the coast is one of the driest deserts in the world. Ask: "How is the coast of Peru different from the coasts of Sweden and Norway?" Anywhere between 10 and 40 miles from the ocean, Peru's mountains rise suddenly. The climate becomes mild at about 9,000 feet above sea level. It is at this altitude and above that the Incas and other people live. On the eastern slopes of the mountains, thick jungles and rain forests begin at 6,000 feet above sea level. Another kind of people live here. The snow line begins about 17,000 feet above sea level. Ask: How many different kinds of land does Peru have?"

Lesson Development

Have the class read pages 124 and 125. Tell them again that the Incas lived 9,000 feet above sea level, where there are few trees. Ask: "Where is the weather the warmest in Peru? Where in Peru is the weather mild? Does Peru have cold weather? What is one of the problems of living in the mountains? What is thin air?" Explain that people need oxygen to live. There is less oxygen higher in the mountains. The Incas can live there because their large lungs enable them to breathe in more air and get more oxygen. Ask: "If it is so difficult to breathe high in the Andes, why didn't the Incas live lower in the mountains? Do you think that other people lived lower in the mountains? Would they allow the Incas to move into their lands without a fight?" Tell the pupils that scholars think the Incas originally lived around Lake Titicaca (tit i käk' ə), which is a high tableland (a high, flat area). They moved from there

Along the western coast of South America there is a chain of mountains. The mountains are very high and their tips are covered with snow. This mountain chain is called the Andes. There are narrow valleys in the mountains of the Andes. A famous tribe of South American Indians lived in these valleys. They were called the Incas. In their mountain surroundings, the Incas set up a very advanced way of life.

LIVING IN THE ANDES

In the Andes, man and his environment go well together. The air is thin in the high Andes mountains. Thin air is hard to breathe. But the Indians of the Andes have larger lungs than other people. With their larger lungs, they can breathe more air. People not used to living on high mountains cannot breathe very well in the Andes. They become dizzy and sick to their stomachs, and grow very tired.

Weather The temperature in the Andes is very different in the day than it is at night. The days are often very hot. The nights are usually freezing cold. But the Incas adapted their ways to this weather. They learned how to preserve the foods that they grew.

Crops of the Andes The main crop of the Andes is the white potato. The Incas discovered that drying the potatoes kept them from spoiling. To dry them, they left the potatoes outside at night. The cold night air would freeze the



potatoes. The next morning the Incas squeezed the water out of the potatoes with their feet. They did this for several days until the potatoes became small and black. These dried potatoes were called *chuño*. The Incas could then keep them for a very long time. Today, people in the Andes still make *chuño* in this way.

The Incas also grew other crops. They grew peppers, corn, tomatoes, and beans. Farmers in the Andes were the first people to grow potatoes, peppers, and tomatoes.

◆ Is the white potato an important crop? Who eats white potatoes today?

◆ chūn'yō

to the valleys of the Andes. Have the class find Lake Titicaca on the map on page 125. Ask: "Do you think the Incas lived in the same kind of houses as the Vikings? Did they eat the same kinds of foods?"

Show the class the following list of foods grown at various altitudes in Peru:

- up to 15,000 feet: potatoes (over 40 kinds)
- up to 12,700 feet: corn (over 20 kinds)
- 9,000–12,000 feet: quinoa ([kē' nō ə] similar to oats), oca ([ō' kə] a root crop)
- 6,000–9,000 feet: chili peppers, peppers, tomatoes, beans, squash, papayas, avocados
- below 6,000 feet (eastern rain forest): peanuts, cacao (used in making cocoa and chocolate), pineapples, manioc (used for tapioca and farina), strawberries
- sea level (coast): sweet potatoes, squash, gourds

Ask: "Do you think the Andes has more kinds of plants than the mountains of Scandinavia? Why would farming be different in Peru than in Scandinavia?" Have the class draw a decorative crop map of the Andes, based on the table just given. Ask: "Why was the white potato the main crop of the Andes? What other vegetables and grains did the Incas depend on? Why do you think the Incas made *chuño*? (The *chuño* could be made into flour and stored in huge granaries.) Why would the Incas want to control people in lower parts of the Andes? What did they have that the Incas did not have?"

Ask: "Do we eat many of the vegetables and fruits that were once grown only in the Andes? How many kinds of potatoes do you eat? How many kinds of corn?"

Instruct the pupils to read page 126. Ask: "What is the llama carrying? Do you see anything in the picture that might have been made from what the llama is carrying? Do you think the Incas used llama hair for anything?" Explain that the llama is a pack animal rather than a draft animal. It can live as high as 17,000 feet above sea level. Ask: "What is a draft animal?" (An animal with strong enough shoulders to pull heavy loads.) Tell the class that the Andes has no draft animals. Ask: "Why do you think the Incas never invented the wheel? Did they have any animals to pull carts or wagons? Does the United States have any pack animals? any draft animals?" Help the pupils find out what other animals there are in the Andes (vicuña [vi kün' yə], alpaca, chinchilla, rodents, and many birds) along the coast and in the forest regions. Ask: "Do you think the Incas ate llama meat? (yes) Was the llama a valuable animal to the Incas? Do you think the Incas tried to raise large herds of llamas? What do you think llamas eat?" (grass) Tell the class that the Incas almost never rode the llamas. Ask: "How did the Incas travel long distances?" (They walked.)

Instruct the pupils to read page 127. Ask: "Do you think the Incas are well known for their architecture—their way of building? Did the Incas have to be able to cooperate with each other to build stone structures like the one shown in the picture on page 127? Do you think the Incas were organized?" Have the pupils explain these answers.

Tell the class that the Incas used no nails nor cement, and very little wood in their buildings. Ask: "What would happen to our buildings if the nails, wood, and cement were

♦ lă'mə

Llamas are very stubborn animals. If a llama thinks its load is too heavy, it will lie down and refuse to move. A llama can carry 100 pounds about 15 or 20 miles a day along steep mountain trails. Do you think people could travel as far in one day carrying as heavy a load?

Animals of the Andes Look at the picture on this page. It is a picture of a llama. Llamas live only in the Andes.

Llamas are like camels. They can go without food and water for a long time. They can live in very hot and very cold weather. Why is the llama a good animal for people in the Andes?

The Incas used llamas to carry things up and down the mountains. But llamas cannot carry anything that is very heavy. They can carry about as much as a man can carry.





Cities of stone High up in the Andes, the Incas built forts and large cities. They made these buildings out of stone. The stone for building was down in the valley. It took hundreds of men to pull one block of stone up to the building site. At the site, workers would cut and make ridges in the stones' edges. The ridges fit together like parts of a puzzle. Not even the blade of a knife could be pushed between them.

The greatest Inca city was the capital, Cuzco. Important buildings such as the Temple of the Sun and the palaces were made of stone. Some had walls covered with gold. People from all parts of the Inca lands lived in the city. Each group wore a different kind of head-dress. Nobles wore gold earrings.

Stone remains of Inca cities still stand in the Andes Mountains. Why do you think the Incas used stone to build their cities?

◆ küz' kō

◆ A noble (nō' bl) is a person who is more powerful than everybody but a king.

taken away?" Explain that the Inca buildings had stone walls, but that the roofs were of straw.

Tell the pupils that the Inca streets led to a central square, where a temple to the Sun, other temples, palaces, and government houses were located. Granaries and houses for the people were on the edges of the cities. Most people did not live in the cities but in villages. Ask: "Do you think most people lived in houses made of huge blocks of stone?" (Their homes were made of fieldstone, mud, and adobe brick.) Inca cities were not surrounded by walls. They were defended from a fort that was built nearby on the hill. Ask: "Do you think Inca cities were planned or did they grow as people needed space? Do you think the cities were trade centers? What buildings were the most important ones in the Inca city?"

Have the pupils read the first two sections of page 128. Ask: "Do you think the *ayllus* had leaders? Who would people go to for advice if all the people were related? (elders) Do you think the people in the *ayllus* made everything they needed to live? Would the homes in the *ayllus* have much furniture? Were there trees for making furniture high in the Andes? Where would the Incas have to go to get wood? Was it easier to farm mountain land in a group than alone, especially if there are no draft animals? Do farms in mountains need to be irrigated? How do you keep water and soil from running down the side of mountains?" Have the class look at the picture on page 132. Ask: "How did the Incas change their land to help them farm? Was it important for the Incas to feel a sense of togetherness? Do you think it

is easier to feel close to people in the community if everyone works the land in common and believes that the land in the *ayllu* is everybody's responsibility? Was the *ayllu* suited to land in the Andes?"

Activities

1. Have the pupils research and prepare a bulletin-board display on plants and vegetables of Peru. The display should show not only the plants, but the ways in which they are used.

2. Tell the class to go to the library and find books with pictures and diagrams of Inca cities. Have the pupils make a clay model of one of the Inca cities, perhaps of Cuzco.

◆ T' lü

◆ The Lord Inca was the ruler of the Incas.

LESSON 5 (pp. 128–137)

Lesson Objectives: Understanding the relationship between the Inca people and their government. Understanding how the Incas built their empire and ruled it. Appreciating the organizational and engineering skills of the Incas.

Lesson Skills: comparing and contrasting, recalling, "reading" pictures, inferring

The ayllu In the 1400s, millions of Incas lived in the Andes. These people lived together in different communities. The people of an Inca community were all related to each other. Each community was called an *ayllu*.

The members of an *ayllu* farmed their land together. They shared the foods that they grew. They all used the same tools, animals, and goods. Each member of an *ayllu* also had a small plot of land to farm for himself.

Dividing the land The members of an *ayllu* did not own the land they lived on. They believed that all land belonged to the Lord Inca. He only loaned the land to his people.

Every fall, the Lord Inca would give the Incas permission to use the land. First, he always made sure there was enough land for his palaces. He also set aside land for temples to the Inca sun god. Then he gave the people their land.

The Inca peasants took care of all the land. They farmed the Lord Inca's land and the temple lands plus their own. They also farmed the land of the old or sick people.

GOVERNMENT OF THE INCAS

Taxes Members of the *ayllu* paid taxes to the Inca government. Because the Incas did not use money, they paid their taxes by working. They fixed roads and bridges. They helped to build palaces, temples, forts, and other kinds of buildings. They also mined metal ores and fought in the army.

◆ A tax is money people pay to a government to help pay the costs of the government.

◆ Ore is rock, sand, or dirt in which metals are found.

Work records were kept. These records made sure that no one paid too many taxes. The Incas did not want their people to work too hard or to be away from home for too long.

Chosen Women Most people were born and died in their *ayllus*. But not the Chosen Women. These women were chosen for their beauty and their skills. They were sent to Cuzco to learn the arts of weaving and cooking. They made special clothes and food for the Lord Inca. Some of the Chosen Women became his wives or married important government workers. Other Chosen Women went to the temples to become servants of the sun god.

Government Every *ayllu* elected a leader to head it. It also had a council of old men. Higher up than the *ayllu* leader and his council were governors who ruled a group of *ayllus*. Finally, at the very top of the government, was the Lord Inca.

The Lord Inca was the most powerful Inca. The Incas thought that he was related to the sun god. Anyone who visited him had to bow down. Everything that he owned was holy. The leftovers from his meals had to be burned. He wore new clothes every day and had them burned when he finished wearing them. When he died, his body rested in a special temple.

The ruling class The Lord Inca picked his smartest son to become ruler after him. All of his other relatives were members of the ruling class.

◆ Weaving is a special way of making clothes out of thread.

◆ Why do you think the food and clothing of the Lord Inca were burned?

Introduction

Tell the class to think about what they know about the Incas. Ask: "Why do you think the Incas created a great empire? Do you think that different people in the Andes fought each other from time to time?" Explain that the Incas were not the first people of the Andes to start an empire or to build cities. Earlier people built cities and roads before the Incas did. But the Incas were the first to organize the conquered peoples and areas and to make them a solid part of an empire.

Lesson Development

Have the class read about the government of the Incas, on pages 128–129. Tell the pupils that the Incas did not use money. Therefore, they paid their taxes in services rather than in money. All workers owed the government so many days of work a year. Ask: "What is a service? How do people pay for road building, schools, and other public works in the United States? Do you think some Incas did not have to 'pay' a tax?"

Ask: "Were the Chosen Women important to the Lord Inca? Did the Chosen Women have special duties? How do you choose people for special jobs? Do you think the Incas had much choice in the kinds of jobs they could hold? Do you think that most of them made their own clothing and cooked their own food? Do you think they had many restaurants and schools for learning to sew and design clothes? Can you have large stores and restaurants without using money? How would you pay for things? How can people learn to become chefs and fashion designers if there is no big need for them in the community as a whole? Why did the Lord Inca need special

clothes? Why do you think his clothes were burned after he had used them only once? Did the Incas think he was a special person? Were his belongings and the things he touched special? Explain that the Incas had many ways of expressing their adoration of the Lord Inca, whom they worshiped as a god. The Chosen Women held his plates for him as he ate. Chair bearers carried him almost everywhere. Visitors entered his presence barefoot, and they had to prostrate themselves before him. Ask: "How do the leaders of the United States travel about? Do they drive their own cars all the time? Is it easy to visit local and national leaders? How would you go about visiting them? Would you talk to the President in the same way as you talk to your parents or teachers?"

Explain that although the Incas did not use money, they traded, or bartered, goods. In fact, the Incas had large markets and lively festivals and celebrations. People traded their extra or surplus goods so as to obtain things they did not have. Markets were important for another reason, too. Special news and new laws were announced at the markets. For that reason, the Lord Inca ordered the people to go to the markets. Ask: "How do you make sure all important news is told to everyone if there are no newspapers and radios?"

Have the class read page 130 to help them understand how this system came about and how the Incas made people contribute to their government and obey its laws. Ask: "Did the early Incas live in a fertile area? Did they need better land to grow crops? How did they get that land? Did they enlarge their lands and become more powerful in

CREATION MYTH

People lived in the Andes for a long time. Before the Incas, however, people lived a simple way of life. They slept in caves and ate grass, roots, nuts, and fruit. Inti (ən'tē), the sun, saw their hardships. He finally took pity on the poor humans. He sent his children to teach them.

The children of the sun came out of a cave near Cuzco. Their father had given them a golden stick. They were supposed to test the ground with this stick. Inti had told them to build a city at the place where the stick disappeared into the soil. The children wandered about testing the ground.

The stick disappeared at the site where Cuzco now stands.

The Incas settled here and taught the people how to live a better life. They showed men how to farm. They taught women how to make cloth. They also taught them to live in houses, to obey laws, and to make many things.

Soon, the children of the sun left Cuzco. They wandered to other regions.

In each region they conquered, the Incas taught people about their way of life and about their father, the sun.

Who were the first Incas? Why did they conquer their neighbors? Who was the main god of the Incas?





The members of the ruling class lived a better life than the other Incas. For example, they did not have to pay taxes. They had more important jobs. They headed the army and directed the farming.

THE INCA EMPIRE

The Incas sometimes fought small wars in places near Cuzco. But, around 1450, the Incas began attacking other big countries to take over their land.

Ruling the empire When the Incas took over a new region, they did one of two things. If the people in the new region were friendly,

► What other jobs do you think the members of the ruling class may have done?

◆ An empire is a group of countries that are ruled by one government.

peaceful ways? Tell the class that Cuzco, the Inca capital, is 11,000 feet above sea level. Have the pupils find Cuzco on the map on page 125. Ask: "In which direction did the Incas move in search of more and better land?"

Ask: "For what reason besides desire for land did the Incas conquer their neighbors? Is it enough to conquer people in order to rule well? Must you also teach people to believe in your beliefs and to respect your ways? Would the sun be important to a farming people, especially if they live high in the Andes? What metal is the color of the sun? What metal do you think the Incas used to honor the sun (whom the Incas called Inti)? Do you think the Lord Inca wore much gold? Can you guess why he might have worn large gold earrings? Do you think special buildings and temples were decorated with gold?" Explain that the Incas palaces and the main temples in Cuzco had walls lined with gold. Cuzco also had a special building called the Golden Enclosure. It was the first group of temples built by the first Lord Inca. Even the outside of its walls were gold. It had a Field of the Sun, which was an imitation field of gold. Rows of corn, straw, llamas, and shepherds were all represented by life-sized statues and objects in gold.

These and other precious statues, jewelry, pottery, furniture, and weapons used by the Lord Inca were made by special craftsmen that lived and worked for him in Cuzco. Ask: "Do you think the Incas were a religious people? Did they spend much care and effort in building their temples? Do you think the Incas were a small tribe who conquered the people around them and set themselves up as a ruling class?"

Tell the pupils that later, when the empire became very big, the Lord Inca appointed others besides his own family to high offices. They became an honorary nobility.

Have the class read pages 131–132. Ask: “What does it mean to form an empire? Can you think of three reasons why the Incas tried to form an empire?” Tell the class that the Incas first conquered Peru. Later, they crossed the Atacama (ät ə kām’ ə) Desert to southern Chile (chil’ ē) and expanded the empire to the Maule (mau’ lā) River. Have the pupils find the Atacama Desert and the Maule River on a land map of Chile. The Incas later conquered lands as far north as Ecuador. Tell the class that the Incas did not call their land the Inca Empire, or even Peru. They called it the Four Quarters of the World. It included: (1) Cuzco and the land to the east of the Andes, (2) the land to the southwest of Cuzco, (3) the land to the southeast of Cuzco, including Lake Titicaca and part of Brazil, (4) the land northwest of Cuzco.

Tell the class to look at the picture on page 131. Ask: “What does the picture show? What weapon is the Lord Inca using? Did the men who carried his litter in war have to be brave?” Explain that in addition to slingshots, the Incas used maces, axes, and spears. They protected themselves with helmets and shields, and wore wooden coverings over their backs to protect their spines.

Ask: “Why do you think the Incas sent unfriendly or resentful Indians to a strange place? Would they make sure that these people were placed with people who were very friendly with the Incas? Why do you think that people faithful to the Incas were given new lands?”

■ Why do you think the Incas sent these boys to Cuzco? How would learning the Inca way of life change these boys?

◆ To irrigate is to bring water to the land.

the Incas were kind to them and to their rulers. But they always made sure to send the sons of the rulers to Cuzco. There, the boys had to learn the Inca language, the Inca way of life, and the Inca laws.

The Incas sent unfriendly people to a new place, where they would be strangers. Then they gave their friends the homes of the unfriendly people.

The Incas made changes when they came to a new region. For example, they would build canals. This water was then used to irrigate the fields in the dry season. Irrigation made more crops grow. The Incas needed these crops for food.

The Incas irrigated their land by carving steplike levels, called terraces. The terraces in the picture remain from Inca times. How do you think terraces aided irrigation?





Roads and bridges The Incas built many roads and bridges. These roads and bridges connected all parts of the Inca empire.

There were two main roads—a mountain road and a coast road. People had to ask permission from the Inca government to use the roads. They also had to pay a toll.

Messengers Messengers carried news and letters over these roads. These messengers were very fast. They ran at top speed from one messenger station to the next. The messenger usually did two things when he met the next messenger—he gave him the message and he handed him a special tool. This tool was called a *quipu*. It had strings with knots tied on them. It was used to send messages about numbers. How do you think it showed numbers?

◆ How did the roads help the Incas to rule their empire?

◆ A toll is a tax that is paid to do or use something. Who do you think the tolls were paid to?

◆ *kē'pū*

Tell the class that the Incas were usually kind to their captives. They did not destroy their religions but made the Inca religion the most important one of all.

Have the class read page 133. Ask: "Do you think the Incas wanted to know how many people lived in the conquered area? Why? How did the Incas decide which places had room for more people? How did they know how many people an area could afford to send to help build roads, bridges, canals, and so on? Why was it so important to build irrigation canals and roads? How did the Incas get from one place to another quickly? Did the Inca empire have so much trade that it needed elaborate roads?"

Tell the pupils that the mountain road—the Andean royal road—was 3,250 miles long. The coastal road was 2,520 miles long. Some of these roads were laid with stone and all were 24 feet wide. Ask: "Did the Incas have carts, wheeled vehicles, or chariots to use along the roads? Why did they need such a wide road?" Explain that they needed the roads for their armies. Ask: "How else could armies be sent to rebellious areas quickly? How else could the Incas get important news quickly? Were the Incas great engineers? Is it easy to build bridges over very high mountain peaks? to build roads along steep mountains?" The greatest of the Inca roads was the one over the Apurimac (äp ɔ rē' māk) River, which is known to many people as the Bridge of San Luis Rey (san lū' ē rā'). It was a hanging bridge made of wood and of rope fiber that was as wide as a person's body. The Incas had to build this bridge in order to go northward.

Tell the pupils to look at the picture on page 133. Ask: "What is the man in the picture doing? What is he blowing? What is he blowing? (a conch shell) Why is he blowing it?" Tell the class that stations were built every 12 to 18 miles apart. They had dried corn, *chuño* and dried meat stored in them. Ask: "Did the Incas have to run far? Was it difficult to run that distance uphill? Can you run that far? Do you know anyone who can run that far? How do you think runners prepared for their jobs? (From earliest age, boys ran up and down the mountains and played running games.) Do you play games that help prepare you for the future? Which games do you play the most? How do these games help you?"

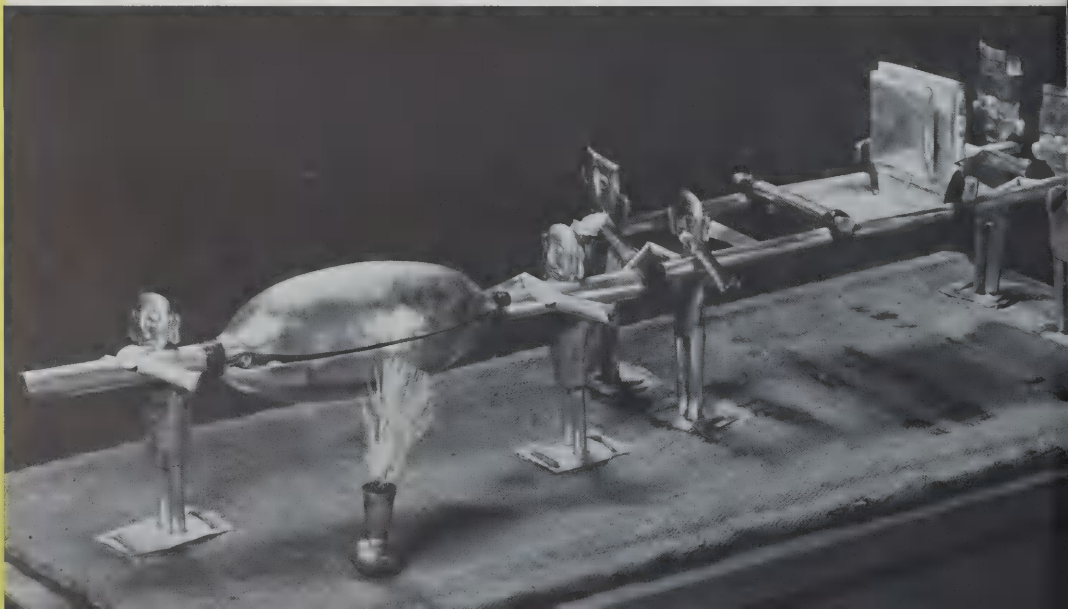
Ask: "What is the runner in the picture holding in his hand?" (a *quipu* and a shield) Inform the pupils that the Incas not only had special ways of tying knots to tell things, but they also used different colored threads in the *quipu*. Find a clear picture of a *quipu* and show it to the class. Give the pupils some string and five different colored pieces of thread. Have the pupils see if they can make a *quipu* with them and tie knots in it so that it gives a count of something.

Tell the pupils to look at the pictures on page 134. Ask: "Why do you think the figure holding the corn was found in a field? Did the jewelry shown in the picture on the top right of the page belong to an Inca noble? How can you tell?" Tell the class that the Incas tried to preserve the bodies of their rulers as mummies. Ask: "Can you guess why? Do you think the Incas also put the Lord Inca's favorite things in his tomb with him?"

Ask: "Did the Incas know how to work with metal? Do you know where metal comes



The Incas made statues and jewelry from gold and silver. The figure holding corn was found in a field, the ones with the coffin in a tomb. What do they show about Inca life?



Machu Picchu In the Andes, about 50 miles from Cuzco, are the ruins of an Inca city. They lie on a narrow mountain ridge. On three sides of this mountain ridge is the Urubamba River. The river roars through a canyon far below. On the fourth side of the mountain ridge is a steep mountain peak.

These are the ruins of Machu Picchu, a city built, by the Incas to protect themselves against invaders. The site of Machu Picchu made the city a natural fortress against any enemies. Can you explain why Machu Picchu was a natural fortress?

Incas lived in Machu Picchu until the sixteenth century. At that time, the people of the city seem to have left it. The stone buildings of Machu Picchu crumbled into ruins. A forest crept in and covered the city.

The ruins of Machu Picchu were not discovered until 1911, when a famous explorer named Hiram Bingham found his way to the site. In the following year, Bingham began to dig out the city. He found that it was built on steep slopes of terraces. These terraces were connected to one another by stairways. On the terraces, the Incas of Machu Picchu grew their crops.

Bingham also found that Machu Picchu contained the remains of stations for sending signals. From these stations, the people of Machu Picchu could send and receive information across the mountains. Why do you think the regular Inca messenger system could not be used to send information to and from Machu Picchu?

◆ ur ə bām' bə

◆ mă chū pēk' chū

◆ Why do you think Machu Picchu was not discovered until 1911?

from?" Explain that the Incas mined copper, silver, and other metal ores from the Andes. Gold was mined from rivers in the jungle region east of Lake Titicaca. It was then melted into bars and stored. Ask: "Were the gold and silver objects shown on this page made in the same way? Was some of it beaten, or hammered, into thin sheets and then made into different shapes? Was some of it cast—that is, was some of it poured into a mold or shape and then allowed to cool and harden in that shape?"

Tell the class that the Incas used bronze for weapons, tools, pins, and so on. The farmers and people who worked in the mines were not allowed to have any gold or other precious metals. These belonged to the Lord Inca. Ask "How else did the Incas use their gold besides making things for the Lord Inca's use?"

Tell the pupils to read page 135. Inform them that Machu Picchu is a little over 6,700 feet above sea level. Ask: "Is the climate of Machu Picchu hot? Is it humid here? Why is Machu Picchu a natural fortress? Would it be difficult to travel there? Could you approach it from all sides? Do you think it was hard to get the stones used to build Machu Picchu up the mountain? Do you think there was much traffic to and from the city? Is it surprising that people forgot Machu Picchu had existed, so that it was 'lost' for many centuries?" Tell the class that some scholars think that the terraces of Machu Picchu could grow only enough crops for about 500 people. Ask: "Do you think that Machu Picchu may have been a special city for a small group of people—priests, Chosen Women, or Inca nobles?"

Have the class read page 136 and look at the farming calendar on pages 136 and 137. Tell the pupils that the following captions explain what farmers had to do during each month.

January: People work in the potato fields.

February: Drums frighten away foxes and deer who try to eat the corn.

March: Watchmen of the fields chase away birds.

April: Fruits, corn, potatoes, and other vegetables ripen.

May: Farmers pick the corn during this month, which is the beginning of the dry season.

June: The Incas collect potatoes from the ground with digging sticks.

July: Crops are carried to storehouses.

August: Inca nobles turn over the soil with tools. Inca women break up the clumps of soil with their hands and serve a drink called chicha (chē' chə), which is made from corn.

September: New corn is planted.

October: The watchman of the fields guards the growing corn during this month, which is the beginning of the wet season.

November: Farmers irrigate their crops from special storage places during this month if the rains did not come in October.

December: Potatoes and quinoa are planted.

INCA FARMING

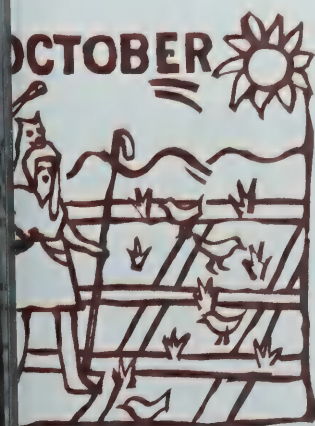
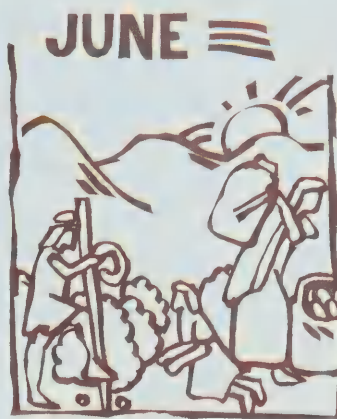
There are only two seasons in Peru. Winter lasts from the end of March through November. Summer runs from late November through the middle of March. Summer is the rainy season.

Read the Inca farming calendar below.

When did the farming year start? What kind of farming tools did the Incas use? What were the main crops that they grew? Did men and women work together?

Did the Incas use their land in a different way than the Vikings? Why?





Ask: "How many seasons are there in the Andes? When did the farming year begin? When was corn planted? When were potatoes planted? Do vegetables take different amounts of time to ripen? What animals are shown in the pictures? Which pictures show a digging stick and which show hoes? Have you seen any pictures of the digging stick before now in this unit? Do you think the Lord Inca used a special golden digging stick as a symbol of his importance? How are heavy loads being carried in the pictures?"

Activities

1. Have the pupils imagine they are Incas. Tell them to write a one-month diary in which they record the principal events of the time—what they did and thought, their experiences during a visit to the market, and so forth. The pupils should tell what they do for a living and what their friends do for a living.

2. Tell the pupils to draw a picture of what they think the main square of Cuzco looked like, a picture of a crowded market scene during Inca times, or a picture of the Inca army fully equipped and preparing to cross a bridge high above a river in the mountains.

3. Have the pupils draw a calendar for their school year like the farming calendar. They should show the main events of each month, such as holidays, vacations, trips, and so on.

LESSON 7 (pp. 138–143)

Lesson Objectives: Understanding that the Spanish conquered the Incas in the 1530s. Understanding how the Spanish conquest changed the Inca way of life. Knowing what Peru is like today.

Lesson Skills: comparing and contrasting, “reading” pictures, inferring, analyzing information, recalling

Introduction

Tell the pupils to imagine they are visiting South America or any of the lands nearby. While there, they hear of a country of gold and jewels far away in the mountains. Ask: “Would you want to go there? Why? Would you believe what you heard? Are there famous places in the world you would like to visit today? Why would you like to visit them?”

Lesson Development

Have the class read pages 138–139. Ask: “Why did the Spaniards go to find the Incas? Why was the Inca empire called the ‘Land of Gold’ by others?” Have the class look in an atlas and find Spain. Ask: “What ocean did the Spanish explorers cross to get to Central America? Do you think they needed good ships to travel that far? Would the ships have to be big enough to carry food, weapons, and tools for everybody on board for a long time?”

Bring into class pictures of the ships used by the explorers of the late fifteenth and mid-sixteenth centuries. Point out how they differed from the Viking ships. For example, the later ships had a rudder instead of a steering oar, several decks, superstructures in the front and back of the ships, and many sails. Ask: “What happened to the ships if there



THE SPANISH COME TO PERU

In the 1500s, people outside the Andes began to hear about the Incas. The Inca Indians became famous as far away as Central America. Find Central America on the map on page 125. Is Central America far away from the Andes Mountains?

A land of gold In the 1520s, a Spanish explorer named Francisco Pizarro was exploring Central America. In Central America, he heard rumors about a rich kingdom to the south. This kingdom was called El Dorado,

◆ pi zär' ö

◆ el də rä' dö

which means “land of gold.” Some people said that El Dorado was filled with gold, silver, and all kinds of jewels.

Most people did not really believe in El Dorado. But Pizarro did. He sailed south to find it. Instead of El Dorado, he found the land of the Incas.

Spanish rule Pizarro and his Spanish soldiers conquered Peru between 1532 and 1533. They needed only a few soldiers to defeat the Incas.

The Spanish ruled Peru and the land around it for 300 years. They built a new city on the coast of Peru. They called it Lima and made it the new capital.

The Incas became very poor under Spanish rule. The Spanish took away all of the Incas’ land. They built themselves huge farms and ranches. They forced the Incas to work on their farms. They paid them very little money.

The Spanish were Catholics, so they made Catholicism the religion of Peru. They also brought in their own language—Spanish. Spanish was the only language that they taught in schools or spoke at work. They also wrote books and newspapers only in Spanish.

A few Incas married Spanish people and learned to be like them. These people had better jobs than the Incas who did not learn Spanish ways.

Most Incas stayed in the mountains. They moved higher and higher up. They did not want to learn the Spanish ways of life. In the mountains they felt safe from the Spanish.

► Look at the picture on page 138. What did the Spanish soldiers have to fight with that the Incas did not have? How did this help the Spanish conquer Peru?

◆ lē’ mē

► Find Lima on the map on page 125. Why did the Spanish want to live near the coast rather than in the mountains?

► How did the mountains protect the Incas from the Spanish?

was no wind? What did the Vikings do if they had no wind for their sails?”

Tell the pupils that the Incas were surprised when the Spaniards came by sea. They never expected anyone to invade that way. Ask: “Why do you think the Incas did not turn to the sea the way the Vikings did? Did the Incas need the sea? Was the land along the sea in this part of the world good land for farming? Did it have trees to give wood for ships? What kinds of boats do you think the Incas and people along the coast used? Did the Incas need the sea for food?”

Tell the class that when the Spaniards first appeared the Lord Inca was dying. Unfortunately, he died without naming his heir. The result was a five-year civil war between two of his most ambitious sons—Atahualpa (at ə wāl’ pə) and Huascar (wäs’ kar). Ask: “Did the civil war help the Spaniards defeat the Incas? Did the civil war weaken the Inca empire?” Inform the class that just as Atahualpa defeated Huascar, Pizarro returned to Peru. He invited Atahualpa to come to visit him unarmed. Atahualpa came, and when he refused to accept the Spanish king as his king, was killed. Ask: “Why do you think Atahualpa agreed to visit the Spaniards unarmed? Do you think he believed he was so special now that he was Lord Inca that no one would harm him? How do you think the rest of the Incas felt after their leader, whom they worshiped as a god, had been killed? Would they be confused? Is it easier to defeat people who are confused than those who are well organized? What else helped the Spanish defeat the Incas?”

Tell the class that the Spaniards brought the Inca way of life to an end. Ask: "Do you think the new capital of Lima looked like the Inca cities? Could the Spaniards have gotten the Indians to build them cities like the Inca cities? Did the Spaniards know how to build the same kind of buildings that the Incas did? Why did the Inca civilization die? Could the people of the Andes live well in the mountains without organization? Did the Spaniards allow the Incas to live in the same way? How did they change their life? What happened to the *ayllu*? Was there anyone to keep up the Inca roads and bridges? Was it easy for the Spaniards to stay up in the mountains and run the Inca cities?"

Have the pupils look at the pictures on pages 140-141. Ask: "What part of Peru do the pictures on the top of page 140 show? What are the people in the pictures doing? Are they dressed in new ways or old ways? Are the animals in the pictures old animals of the Andes or were they introduced after the Spanish conquest? What does the picture at the bottom of the page tell you about the waters off the coast of Peru?"

Tell the class that a cold stream of water flows up the coast of Peru. It has in it small plants and animals called plankton, which fish like to eat. Ask: "Do you think the waters off Peru are rich in fish life?"

Have the pupils look at the pictures on page 141. Ask: "Do you think the picture on the top of the page is of a city on the coast?" Tell the class that it is of Lima, the capital. Ask: "Does Lima look like other big, modern cities of the world? What about it is the same? What do you think the picture on the bottom of the page shows? Do you think the In-





Pictures of modern Peru show the old and the new. People near cities work in factories. On the coast, fishing has become a major industry. In the Andes, Indians still farm and grow just enough to live on and to feed a few animals. They still keep the old Indian way of life. What pictures show this?



dians of the Andes have sold things this way for a long time? Are they following an old South American custom? Do you think the people in the picture live in the mountains or along the coast? Are they selling both old and new kinds of goods? Which are the old ones and which are the new ones?"

Tell the pupils to read the feature on page 142. Ask: "Do you think the lives of children in coastal cities are different from the lives of Cirilo and Augusto? Would big city children have to help grow crops the way the children in the feature have to? Would they need to stay home from school for this reason during the school year? What else do Cirilo and Augusto do that city children do not do? What do Cirilo and Augusto's parents do to earn extra money? What would they like to buy that did not exist during Inca times? Why do you think people still buy and sell things this way? Does it cost money to open a store? Do stores need people who can travel to them every day rather than just once a week?"

Tell the pupils that the coast of Peru had petroleum, ocean ports, and large sugar and cotton farms. Ask: "What jobs do people along the coast hold that people in the mountains cannot hold?"

Have the class read page 143. Ask: "Can a country become strong if many of its people are poor? What is a good way of helping people to help themselves? Will people want to help themselves to have better homes, more food, good jobs, and an education? Has the Peruvian government thought of a good way to help its people?" Have the pupils explain their answers.

Activities

1. Help the class to go to the library and find out who the Conquistadores were and why they came to the New World. Tell the class to draw an exploration map showing the routes from Spain to Mexico and then to Peru. Have them draw ships along the sea routes and label or draw the peoples the Conquistadores found in Central and South America.

2. Tell the class to prepare a bulletin-board display of Peru today. The pictures should include as many regions of Peru and as many different kinds of jobs as the pupils can find. Also include any special problems the country has.



CIRILO AND AUGUSTO

Two Brothers of Peru is a book by Judith M. Spiegelman and Jack Ling. It tells about the daily life of two Indian brothers who live in modern-day Peru. Their names are Cirilo (cə rill' yō) and Augusto (ou gūs' tō). They live in the *altiplano* (al' ti plä' nō)—the high, flat plain around Lake Titicaca. Find Lake Titicaca (tit ə kă kə) on the map on page 125.

Cirilo and Augusto live in huts which their grandfather built. In the morning, the boys must feed the animals and get fresh water. Then, for breakfast, they eat a porridge made from corn, potatoes, *quinoa* (kēn' ō ä), and onions. At last, they are ready to walk to school.

The boys do not go to school during planting time. They have to help their family plant the potatoes, corn and *quinoa*. Which months of the year do Cirilo and Augusto stay home from school?

Cirilo and Augusto make holes in the soil for the seeds. Their young sister

stands in the fields to scare any animals that might come to eat the seeds.

The family goes to market on Sunday. They wear their best clothes. They carry with them the things they hope to sell—*chuño*, chickens, caps, belts, and *ponchos* (pon' chōs). They ride to the marketplace. Then they set up a table in the street and try to sell their goods.

When they finish selling, the family stops at church for a few minutes. After church, it is their turn to buy. They can only buy things that they need, like sugar and salt. The boys wish they could buy other things. If their family had enough money, they would buy bicycles, sewing machines, and radios.

Is life in Peru much different from the way it was in the past? What things are still the same? What things have changed? Have the ways of farming changed since Inca times? How are the lives of these boys different from the lives of modern Scandinavians? How are their lives different from your life? How are their lives the same?

INDEPENDENCE

Peru became independent from Spain in 1826. After independence, the people's way of life was still difficult. Their jobs were hard, and they had very little money.

Today, the government of Peru is trying to help its people to live better. It is taking over many large companies and farms which only a few people had owned. It is giving much of this land back to the people. But the people cannot do whatever they want with the land. They cannot sell it for money. They must farm it together and share any of the money that they make. Some of this money is used to help the people of the community. They may build roads or new schools with the community money.

Is the sharing of land a new way of life for the people of the Andes Mountains? Why do you think the government is taking away large companies and farms from their owners?

1. Who were the Incas? Where and how long ago did they live?
2. Several of the vegetables that you eat were first grown in the Andes. Can you name three of these foods?
3. What is an important animal in the Andes? Did the Incas use this animal to farm? Did they ride it?
4. What material did the Incas use when they built their cities?
5. What is an ayllu? Who ruled it?
6. How did the Incas pay their taxes? Why did they not use money?
7. Why did the Incas conquer Peru? What changes did they make?
8. When did Peru become independent?

◆ Independent (in di pen'-dent) means free from another nation's rule.

◆ What kind of jobs did they have?

Answers (p. 143)

1. The Incas were a people who lived high in the Andes Mountains of South America. A little over 500 years ago, they built an advanced way of life there and carved out a large empire along the western coast of South America.

2. Tomatoes, peppers, and potatoes were three vegetables that were first grown in the Andes.

3. The llama is the major animal of the Andes. Llamas were not used by the Incas to help them farm, nor were they ridden.

4. The Incas built their cities of stone.

5. An ayllu was an Inca community. It was headed by a council of elders, but ayllu land was owned by the Lord Inca. He also made all the laws.

6. The Incas paid their taxes in services. They did not use money because they did not need it. They had little trade outside of local trade (luxury trade was controlled by the Lord Inca for himself and his nobles), no stores, and few specialists who catered to the needs and tastes of the people.

7. The Incas conquered Peru to obtain more land and also goods they did not have in their own areas. They also wanted to teach other people their religion. They made the conquered people accept their way of life. Sons of the defeated rulers had to live and be educated in Cuzco to ensure their loyalty and practice of the new ways.

8. Peru became independent from Spain in 1826.

INVESTIGATING THE UNIT

Gathering Information

People lived in Scandinavia and South America long before the Vikings and Incas. Find out more about these people from the library and museum. As you do, look for answers to these questions: Did the Vikings and Incas borrow skills from earlier people and improve on them? Did they invent new ways of doing things?

Grouping Information

Gather pictures that show the industries of modern Scandinavia and Peru. Put the pictures that show new industries in one pile. Put those showing old industries, but with new tools and technology, in another.

Are there pictures that you did not put in the two piles? Why not? Do Scandinavia and Peru have many old industries?

What Does the Map Tell You?

Look at the land maps of Scandinavia and Peru. Then get some clay or aluminum foil and some cardboard. Using the land maps as a guide,

make models of the two areas. Put in mountains, fiords, rivers, and large lakes.

Did making the models help you learn how to "read" a land map?

Using What You Have Learned

Look at the picture of the Inca terraces on page 132. Get a pail of wet sand or dirt. Make sure the soil is packed tight. Turn the pail upside down and remove it. Next, try to make layers of terraces. When you have finished, pour water over the top layer. What happens to the water? Why are terraces a good way of keeping soil from being washed down the mountainside?

Next, try to think of a way to get the water from one level to the next without the water running too fast and carrying the soil away. Is this a hard problem to solve?

Comparing and Contrasting

Imagine that you are visiting Scandinavia and Peru during Viking and Inca times. Describe the two places. How do people make their living? spend their day? Are the two places very different?

UNIT 5

READING LESSON: COMPREHENSION— IDENTIFYING SEQUENCE—FACTUAL AND INFERENTIAL

Purpose

Pupils who can identify the sequence of events in a story or the sequence of steps in a process have a richer understanding of what they have studied.

Introduction

Tell the class: "Today we are going to read about a hunt in Small Bear's Indian camp, a hunt for buffalo.

"As you read, pretend your mind is a TV set. As you read about the warriors getting on their horses and riding away, try to see it in your mind. Fill in the details of the picture: Where was the sun? How many warriors were there? How were they dressed? Who was in front? Who was behind?

"Try to keep your TV picture moving along *in the right order*. As you read, think about what is happening first, second, third.

"When you have finished reading and watching that TV set in your mind, I am going to ask you to give me the whole story again—complete, and in the right order."

Development

Have pupils read "The hunt," page 156, thought-

fully and carefully. When they are sure they have it straight, have them close their books.

Distribute the following sentences. Ask pupils to identify the correct order of the story by placing a number on the left. (Pupils need to infer the most "logical" in some cases.)

- (3) The scouts sighted a herd of buffalo and signaled to the others.
- (6) The warriors' horses turned away quickly to avoid the horns of the buffalo.
- (8) The warriors returned to camp with their buffalo meat.
- (2) The hunters lined up: first, the scouts; then the warriors; then Small Bear.
- (1) The morning sun came up.
- (4) All the warriors charged in behind the buffalo herd.
- (5) Some warriors rode in close to the side of a buffalo and shot their arrows.
- (7) Some of the buffalo fell over, killed by arrows.

Application

Ask pupils to read the next-to-last paragraph on page 155 for sequence of steps in a process. Have pupils put these steps in order:

- (3) They shaped and smoothed the wood.
- (1) They found a tree.
- (5) They hung the bow to dry.
- (4) They glued a string of buffalo muscle to the back.
- (2) They cut the tree and let it dry.

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READING LESSON PLANS

THE CHEYENNE: A PLAINS CULTURE

Those who saw the buffaloes by thousands and how they
pawed the prairie sod into dust with their great hoofs . . .
Those who saw the buffaloes are gone.
And the buffaloes are gone.

CARL SANDBURG



Knowledge Objectives

Knowing that the Great Plains of the United States is the flat, sometimes rolling grasslands between the Mississippi River and the Rocky Mountains.

Knowing that the Plains Indians were warriors and hunters mounted on horseback.

Understanding that the Plains Indians hunted buffalo, which provided food and material for tools, clothes, and other necessities.

Knowing that the settlers wanted the plains lands for farms, ranches, and mines, and for building railroads.

Understanding the underlying differences between the Indians and the settlers that brought them into conflict.

Value Objectives

Appreciating the attitude of the Indian toward natural phenomena and his kindred feeling toward nature and the land.

Appreciating the skills of the Plains Indians.

Appreciating the hardships the settlers had to endure on their westward trip across the United States.

Skills

Analyzing the problems that arose from the failure of the Indians and the settlers to communicate.

Classifying the different ways the Indians used the buffalo in order to live.

Evaluating the Plains Indians' way of life.

Interpreting pictures illustrating different aspects of the Plains Indians' way of life.

Reading maps of the plains and of the settlers' routes to the West.

Lesson Objectives: Understanding that the ancestors of the American Indians came to the Americas by crossing the Bering Strait land bridge between the easternmost part of Asia and Alaska. Knowing that the Indians came at different times and filtered throughout North and South America.

Lesson Skills: reading maps, making graphs, forming and testing hypotheses, drawing conclusions, deducing, classifying

Introduction

Ask pupils to remember the last time they went on a camping trip. Ask: "When you sat around the campfire, did you feel a special peace? How did you feel when you walked in the woods? Do you feel different when you are outdoors from when you are in the city?"

Lesson Development

Ask: "What do you think made Indians feel there was a mysterious power in the world? How do you think the Indians explained where plants, animals, and water came from? Do you think the 'Great Spirit' the Indians believed in was their god? Do you think Small Bear felt he was 'brother of all life'?" Discuss with pupils the Indians' belief in the oneness of nature and their feeling that man was bound to all creation.

Life on the Plains



Small Bear was halfway out of his tepee when he felt someone tugging at his braid.

“Where are you going, Small Bear? Can I come with you?”

Even before he heard her voice, Small Bear knew who was tugging at his braid. It was his sister, Yellow Bird Girl. She was the only one in his family who could move without making a sound.

Small Bear often let Yellow Bird Girl come with him. But not tonight. Tonight he was too excited. Just that day his father had told him he could go on the next buffalo hunt!

Small Bear sent his sister back to bed. Then he headed for the low hills to the west of the Indian camp. As he walked, he breathed deeply. He enjoyed the smell of the damp earth and the spring grass. Like all Indians, Small Bear had a very special feeling for the earth and the sky.

Small Bear’s people lived close to nature. They knew a lot about the habits of animals and the way things grow. All these things told them there was a mysterious power in the world.

When he reached the hills, Small Bear began climbing. Then he looked down at the scene below him. He could see the circle of Cheyenne tepees. Inside the tepees, small fires for cooking and heat were burning. The fires made the tepees glow. They glowed only a little. But they could be seen from far away at night because there were no other lights in this part of the **plains**.

Who was Small Bear? Who were the Cheyenne? Where were these plains?

◆ A tepee is an Indian house.

◆ shī an’

◆ A plain (plān) is a large area of flat land.

Have the pupils prepare a debate. One side should represent the Indian view that land and things produced on the land are free to all men and therefore cannot be owned by any man. Let the other side take the viewpoint that property and land can be bought and sold. Ask: “What would happen if your bicycles and games belonged to everyone instead of just to you? Would everyone have more things to play with? Who would take care of the things?”

Before the pupils open their books to this section, ask: “How did our earth begin?” List the answers on the chalkboard. Try to elicit responses such as “a ball of fire,” “a star,” and so on. Tell the pupils who mention the Biblical creation that we do not know exactly how the earth was created, but that we know it is very old, more than four billion years old.

Have the class look at a globe. Try to find a globe showing ocean depths, because it will more vividly illustrate the theory this exercise aims at—that the continents were once joined together. Tell the pupils to look at the shapes of the continents and to imagine that the land masses were cut up for a jigsaw puzzle. Ask: “What pieces of land look as if they might fit together?” Draw the pupils’ attention to the shape of the coast of eastern South America and the west coast of Africa. Ask: “Do you think these two continents were ever joined together? Do you think that millions of years ago, when the continents were joined, animals traveled from continent to continent? Do you think that plant seeds were blown from place to place?”

Have the class read page 148. Tell the pupils that approximately 30 million years ago, the continents of North America and Asia were joined at the Bering Strait. Have pupils decide what this land bridge might mean to migrating animals. Ask: "Are these two continents close to each other at the Bering Strait today?"

Inform the pupils that there were no people on earth during the time the continents were joined. People entered the Americas during the Ice Age, over a land bridge that existed between 28,000 and 10,000 years ago. By 10,000 years ago, the Indians had reached the southern tip of South America. Ask: "Do you think it took a long time for the Indians to settle the Americas? What means of transportation do you think they used?"

Have the pupils trace with their fingers on the map on page 148 the routes the Indians took from Asia throughout the Americas.

Activities

1. Have the pupils find two pictures, one of something in the city and the other of the outdoors. Each picture should show something the pupil has a special feeling about. Tell the class to write a paragraph on each picture, explaining how they feel about what the pictures show. Discuss the different feelings in class.

2. Tell the class to draw one of the scenes described on page 147. Discuss the drawings in class, pointing out the different ways in which the pupils drew the plains, the Indians, and so on.



THE FIRST AMERICANS

Small Bear and the Cheyenne were North American Indians. Their ancestors were the first people to come to North America. They had come from Asia more than 20,000 years ago.

Scientists think that the Asians who crossed over to North America did not have boats. At the time they crossed, the Bering Strait was a strip of icy land. It made a bridge between Asia and North America.

A place to live Why did these Asians come to North America? The first to come were probably looking for a better place to live and hunt in. Some of them stayed in the lands near the Bering Strait. These people are the Eskimos. Others went searching for more lands and hunting grounds throughout the Americas. These people are the American Indians.

As they moved into new places, the Indians learned to use their surroundings to get food, shelter, and clothing. One of the places they moved to was the Great Plains.

Look at the map above. Is there any place on the map where North America is close to Asia?

What is its name?

bir'ing strāt'

A strait is a narrow body of water between two pieces of land.

Look at the map again. The white areas of North America were once covered with ice. Would the people who settled there live differently from those who settled further south?

Lesson Objectives: Understanding that the Great Plains of the United States is the flat, sometimes rolling, grassland between the Mississippi River and the Rocky Mountains. Understanding that the introduction of the horse and the gun changed the life-styles, mobility, and economic well-being of the Indians who lived on the Great Plains. Understanding that tribes are bands of people speaking the same language and having the same religious beliefs.

Lesson Skills: using maps, comparing, evaluating, inferring, making judgments

Introduction

Have the class describe what they expect to see when they visit the ocean, sea, or any other large body of water. Have them tell you what the water looks like when winds blow across it.

Lesson Development

After the pupils describe what water looks like when winds blow across it, ask them if they would say the water was *billowy* or *swelling*. Ask what these words mean. Next, have the class read page 149 and the top of page 150. Ask: "Do you think a 'sea of grass' would look like a sea of water when the wind blows across it? How might they be different?"

Help pupils locate the prairie on a wall map. Have pupils compare the region they have selected on the wall map with the map on page 149. Ask for volunteers to consult the legend on a physical map and find the drier parts of the plains. Have them show the class where these regions are on the wall map. Tell the pupils to note major rivers in

THE PLAINS

The United States has many kinds of land. But between the Mississippi River and the Rocky Mountains, the land is almost all of one kind. It is a large area of flat and very dry land. It is called the Great Plains.

A sea of grass The land of the Great Plains does change a little. In most places there is flat land as far as one can see. But, sometimes small hills break the flatness. The picture on page 150 shows different parts of the plains. Describe what you see. Which part shows the area called the Sea of Grass? Why do you think it was given that name?

The Sea of Grass is really a **prairie**—miles and miles of rolling grassland. Its soil is black and rich. Crops grow well in this soil.

Further west, the soil of the plains is not good for growing crops. It is too dry. The

Look at the map below. Find the Great Plains. What states are in the Great Plains?

What other kinds of land does the United States have? How would you describe "flat land?" What does this kind of land not have? What do we mean when we say a land is dry?

prār' ē

What states on the map have part of their boundaries formed by a river?



this region. Elicit the information that drier lands are found along the mountain foothills where there are few rivers and little water.

Tell the class to look at the picture on page 150 and to think about what they know about the Rocky Mountains. Ask: "Where do you think the Rocky Mountains get their name?" Explain that these mountains also form the Continental Divide—the line that separates the areas whose rivers drain to opposite sides of the continent. In other words, rivers to the east of the Rockies flow eastward and those to the west flow westward. (The map on page 149 indicates this division.) Have pupils investigate to find out what the "rain shadow" (an area of low rainfall, caused by the presence of a mountain barrier) is and how it affects some of the states in this region.

Ask: "How did the Plains Indians get their food? Do you think they were farmers, fishers, or hunters? Would the animals they hunted stay in one place or move about? How would hunters who killed a large deer or a buffalo carry it back to camp if they had to travel on foot? How could they use dogs to help them?"

Have pupils read the rest of page 150 and page 151. Let pupils retell as much of the story of Columbus' discovery of America as they can. Review with them his belief that he had reached the little-known islands off the Asian coast that were known at that time as the Indies. Tell the class that the Europeans continued to call the people Columbus found "Indians" even after they had discovered their error. Today, scholars sometimes use the words *Amerinds* or *Amerindians* to designate the American Indians.

plains become drier and drier as they get closer to the Rocky Mountains.

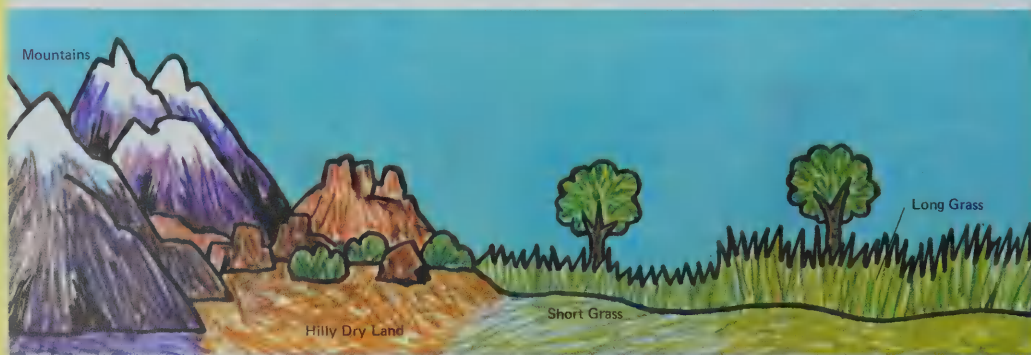
Early Plains Indians In the spring and summer, many Indians made hunting trips into the grasslands. There they found large herds of animals. The Indians could not travel very far though, because they had to move on foot.

EUROPEANS IN AMERICA

This way of Indian life went on for hundreds of years. Then, in 1492, Christopher Columbus discovered America. He was followed by other explorers. The newcomers brought two things that changed life in the plains—horses and guns.

The horse Many of the early explorers were Spanish. In the 1500s, these explorers went to Mexico and to what are now the states of New Mexico and Arizona. They brought horses with them. Some of these horses escaped and became wild.

■ Find these states on the map on page 149.





In 1680, the Indians in the area attacked the Spanish. They drove them out of the area for many years. Spanish horses rode off into the open country and became wild.

After 100 years, large numbers of wild horses were roaming the West. They slowly wandered north into the plains. There, the Indians began to capture them. Suddenly the Plains Indians had a freedom they never knew before.

Now the Indians could hunt far away from their homes. They could get more food to eat. They could get more skins and furs. They traded the furs to white settlers for metal knives, pans, blankets, and strike-a-lights.

Guns The Indians also traded for guns from French and British traders in and near Canada. But the white settlers of the plains did not want the Indians to have guns. The few Indians who could get guns had trouble getting ammunition.

► What do you think the Indians did with the skins?

► A strike-a-light was a metal object used for starting a fire. How do you think Indians made fires before this?

Have the class look back at the map on page 149. Have them locate Mexico, Texas, and other states in the Southwest in order to find where the Spaniards settled for a while. Discuss how the Spanish horses came from these areas to the plains.

Collect pictures of different breeds of horses. Label some of the horses that Indians captured, such as the pinto, or painted Indian pony; the Morgan; and the Arabian. The wild horse, or mustang, was the result of the lack of selectivity in breeding. Explain that mustangs are the small, hardy horses of the plains, descendants of Spanish horses of mixed ancestry. They were often strays and ownerless and ran wild. Ask: "How did horses give the Plains Indians a freedom they never had before?"

Have pupils look up the word *travois* (trə'voi) in a dictionary. Tell the class to look at the picture on page 152. Ask: "Is a travois shown in the picture?" Let pupils use small sticks and string to make a model of the travois. Tell the class that the frame for the travois was then used as the frame for a tepee. Point out that after the acquisition of horses, buffalo-hide tepees could be made larger because larger and heavier poles could be pulled. Larger travois also meant greater freedom of movement over longer distances.

Ask: "How did the gun help improve the life of the Indians? What weapons did the Indians have before the gun? What do you think happened when one tribe had guns and other tribes did not?"

List the advantages the horse and the gun gave to the Indians. Review your list at the conclusion of the chapter to see if any changes should be made on it.

Have the class read page 152. Discuss with them the difference between bands, or families, of Indians, which might have from 20 to 200 people, and tribes. Some tribes of Indians had as many as 2,000 people; everyone in the tribe spoke the same language and had the same religious beliefs. Tribal decisions were usually made by the council of elders. The chiefs acted as advisers rather than as rulers who had to be obeyed.

Have the class look at the map on page 149 again. Have them find the states on whose plains the Northern Cheyenne roamed: Wyoming, Nebraska, and Colorado. Tell them to find a river that touches both Nebraska and Wyoming. This is the Platte River, whose valley was the home of some of the Cheyenne. Now, find the Arkansas River that flows through Kansas, Oklahoma, and into Colorado. Tell the pupils that another group of Cheyenne, the Southern Cheyenne, lived there.

Locate on the map other Indian tribes that are important to the story of the Cheyenne. The Shoshone lived in the hilly area of the Rockies, in southwestern Wyoming, and along the Snake River of southern Idaho and upper Nevada. The Sioux lived northeast of the Cheyenne at the junction of Wyoming, Montana, and South Dakota. Have the class locate these regions.

Activities

1. Help pupils make a salt-and-flour map of North America. Have them paint the relief features different colors.
2. Have the pupils look at the picture on page 151. Tell them to write a short story explaining what is happening in the picture.



THE CHEYENNE

◆ A tribe is a group of people who speak the same language and follow the same rules and customs.

The Cheyenne are a **tribe** of Indians. They once lived in western Wisconsin and Minnesota. There they grew corn and lived in houses of earth and wood. At the end of the 1600s, warlike Indians who had traded for guns chased them off their land. The Cheyenne moved west onto the plains.

Life was hard on the plains. The Cheyenne had to move about in search of food. But in a few years, they had learned to tame horses. Soon the Cheyenne became what we call the Plains Indians—the warlike buffalo hunters on horseback. The Cheyenne and other Plains Indians lived this way for a very short time—only about 100 years. Then they were driven off their land by white settlers.

It is hard for us, whose life is so different, to know what life used to be like for the Cheyenne. One of the ways to understand how they lived is through stories like the one about Small Bear. Read ahead to learn more about his life.

Lesson Objectives: Understanding that people's behavior is based upon their culture, their tools, and their needs. Appreciating the way Indians used stories to pass on their history and to teach.

Lesson Skills: recalling, interpreting pictures, comparing and contrasting

Introduction

Have the pupils close their eyes and try to form a mental picture of an animal, a flower, or something else in nature. Have them write down the first thing that comes to their mind. Ask them to add a descriptive word to indicate size or shape. Tell pupils that this is much like the way Indian boys and girls got their names. Have the pupils make up stories telling how Indians got names such as Small Bear, Great Wolf, Blue Crow, Spotted Dog, Crazy Horse, or Sitting Bull.

Lesson Development

Help pupils see that the Indians were an imaginative people who enjoyed active sports and who played many games. Have the class read from page 153 to the middle of page 154. Tell the pupils to look at the picture on page 154. Ask: "What game do you think the Indians are playing? What skills would this game help the Indians develop?" Explain that according to records and art of this period, young people played "stick in the hoop" (a wheel game in which players tossed a stick over their shoulders into a hoop on the ground) and other games using a hoop or a wheel, kick-ball, racing, shooting arrows at a target, javelin throwing, wrestling, and, in winter, tobogganing.

THE STORY OF SMALL BEAR

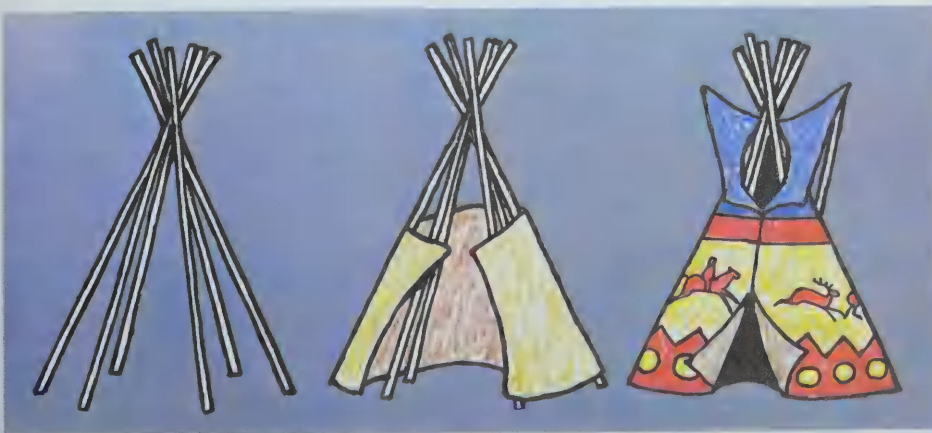
Small Bear on the hill Small Bear climbed to the top of the hill. As he looked down at the tepees, he smiled. He was thinking of the people inside the tepees. He thought of the games they were playing and the stories they were telling.

Grandfather's stories And then Small Bear thought about what had happened that night in his family's tepee. Before they had gone to bed for the night, they had been sitting around the fire. Then Great Wolf, his grandfather, began telling his stories.

Great Wolf had been telling stories about great Cheyenne warriors and their first buffalo hunts. Small Bear had thought, "Grandfather is telling these stories for me." He became more and more excited as he listened. As soon as the stories were finished and everyone went to bed, Small Bear left the tepee.

Look at the drawings of tepees below. Describe how the tepee was made. Was it a good house for people who moved all the time to have? Why?

What did Cheyenne families do for enjoyment in the evenings? What does your family do in the evenings?



Tell the pupils that women played a game like hockey called "shinny," and other kinds of ball games. Guessing games, stone-tossing games, and many games of chance were popular. Ask: "Were the games and sports of the Indians similar to the games you play at school or at home? Would you like to play some of these games?"

Ask: "How do you become a good player?" Elicit such responses as practicing to be better, listening to good advice, following good models and learning about their records, and wanting to do the best job possible. Have the class read the rest of page 154 to compare the answers the pupils gave to the way Small Bear prepared to become a hunter.

Underline the fact that Small Bear was also a good listener and liked the stories told by the hunters. Ask: "Why do you think he liked the hunters' stories? What did the stories teach him?" Have members of the class select a beginning sentence and complete the story in their own words. Some beginning sentences might be: "I was chasing a small rabbit when suddenly . . ." "I had just reached the eagle's nest when a dark shadow crossed over me and . . ."

► Why did Plains Indians start hunting so young?

► How did the Plains Indians learn things? Is this the way you learn?

► Calves (kavz) are young cows or buffalo.



Ready for the hunt Why was Small Bear so excited? Just that day his father had told him he could go on the next buffalo hunt. All the hunters said he was ready, even though he was young. Small Bear was not yet 12 years old.

Everyone in the camp had watched him ride, practice with his bow, and take care of the horses. They knew he was good at sports like kick-the-ball and the wheel game.

Learning the right way The hunters liked the way Small Bear listened to stories of their adventures. They knew Small Bear was eager. They knew that he respected them. When he needed advice, Small Bear knew who to go to. His father, grandfather, uncle, or someone with special knowledge could usually help him.

Now Small Bear was ready to put his skills to use. He was good at hunting small animals like rabbits and birds. But now he was ready to hunt buffalo calves. And he wanted to bring home at least two of them.

The new bow Small Bear practiced hard with his bow and his spear for the next few days. He wanted to keep several arrows in the air at the same time. But he was a little slow because his bow was so new. He soon improved.

A few weeks ago his father had said, "Small Bear, you need a new bow. Go and find a small tree that grows straight. It must not break easily. You know what to look for."

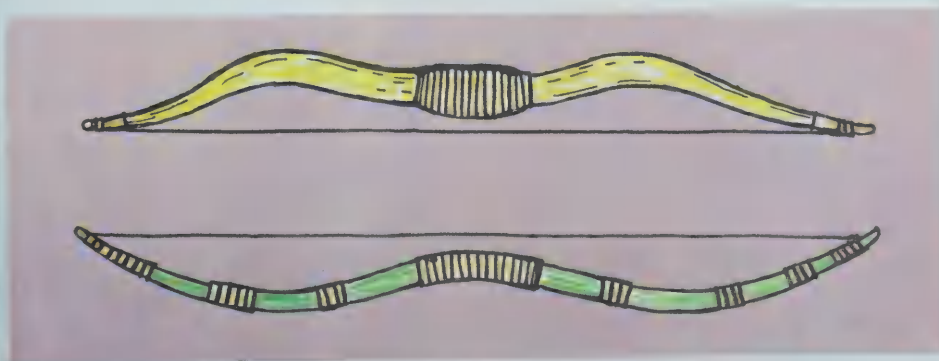
Making the bow Small Bear found a tree that was straight and strong. He and his father cut it and let it dry. Next, they shaped and smoothed the wood. They used a knife and a buffalo bone to do this. When the bow was the right shape, they glued a string of buffalo muscle to the back. This strengthened the bow and made it easy to bend. After the muscle was put on, they hung the bow to dry.

Small Bear's mother had made the glue for them. She had taken some chips of buffalo skin and boiled them in water. This made a strong glue that looked like thick molasses.

■ Why do you think he wanted several arrows in the air at one time? Would he have to be fast to do this?

■ How many different ways did the Cheyenne use buffalo when they made a bow?

Have the class read about the buffalo hunt from the beginning of page 156 through the middle of page 157. Have the class discuss what they found out about the buffalo and the ways it was used by the Indians. Ask: "What other uses did the Indians have for the buffalo? Did the Plains Indians make things of wool? Did they need to? Do you think a buffalo robe would be warmer than a wool blanket? Would it be heavier or lighter in weight? What could the Indians use to scrape the hides? What other important thing did the Indians use buffalo hides to make besides robes?" Tell pupils that a large tepee, or *tipi*, might take as many as 30 buffalo hides. Have the class look at the picture on page 153. Ask: "How were the hides used to make a tepee? Was the tepee a good dwelling for people who moved all the time? Why?" Explain that all parts of the buffalo were used. Hides were used to make moc-casins, or shoes, and skin bags. Buffalo horns were used for tools and as utensils. Dried buffalo dung was used as fuel. The head was often used in ritual ceremonies.



Find out how many pupils have eaten *jerky*, a dried beef. Ask: "How could the Indians preserve meat without canning or refrigerating it?" Tell pupils that dried berries were mixed with dried, pounded buffalo and other game meat, melted fat, and marrow from bones to make *pemmican* (pem' i kən). *Pemmican* kept for a long time.

Most children will not have seen a buffalo, although there are some in zoos and in buffalo preserves, such as the one at Custer, South Dakota. Inform the pupils that buffalo are the largest big game animals in the United States. Have the class tell what they think a buffalo is like: its color, height, length from head to tail, approximate weight, kind of hair, length of life, and the group of animals to which it belongs.

List the statistics you want to know about in one column. Assign groups to find out these things about the buffalo in encyclopedias and other resource materials. Put the committees' findings in a second column.

◆ A scouting party rides ahead of everyone else to see if there is any danger.

◆ A herd (hêrd) is a collection of animals that move together in a group.

◆ Was buffalo hunting dangerous?

The hunt It was the morning of the hunt. The warriors rode out of camp. The scouts were in front. Small Bear rode behind on the quick horse his father gave him to ride. All were as quiet as possible.

As soon as a herd of buffalo was sighted, the hunters charged. They rode up from behind the buffalo so they would not be crushed by the frightened animals. A hunter waited until he was very close before he shot his arrows. The horse ran alongside the buffalo. When it heard the twang of the bowstring, it turned aside. The horse had been trained to turn so that it would not be hit by the buffalo's horns.

A dream come true Small Bear's dream came true. He killed two calves. After the hunt, he went to find them. He did this by looking for his own arrows—the ones with his own design and colors. When he found his calves, he cut them up and brought the meat back to camp.



After the hunt It had been a good hunt. The camp had lots of meat, and only a few men had been hurt.

When Small Bear returned, his father called Blue Crow, an old man, to the tepee. "Look at all the meat Small Bear has brought into camp," he told his friend. "My son will be a great hunter." He then gave Blue Crow a part of the meat and also the horse Small Bear had been riding. This was to teach Small Bear to take care of others and to share things with them.

That night Small Bear's father gave a feast in the boy's honor. He sent Small Bear to the tepee of the best storyteller in camp. Only this man had the right to tell certain Cheyenne stories. The stories belonged to the storyteller's family. In a very shy voice, Small Bear said to him, "My father calls you."

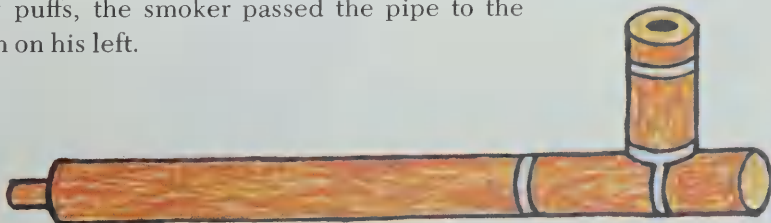
The pipe The storyteller sat in the place of honor when he arrived. He was given a stone pipe filled with tobacco. He touched the bowl of the pipe to the ground and raised it several times. He made special motions with his hands. This meant he would tell the truth.

The Indians were very serious about pipe-smoking. It was almost like a prayer. The pipe had to be held in the right way. After taking a few puffs, the smoker passed the pipe to the man on his left.

■ What else did the tribe do with buffalo besides eat its meat?

■ Was this a good way to teach sharing? The tribe could survive only if everyone worked together. Would people work hard for the tribe if it would not take care of them when they needed it?

■ Does this remind you of a religious ceremony? How?



The class will find that the buffalo is called the American or plains buffalo, but is a bison, and belongs to the ox family. The buffalo may be 7 feet high at the shoulders and up to 12 feet in length (with a tail of 1½ feet). Males weigh between 1,800 and 2,000 pounds (which equals about the weight of 26 fourth-graders), but females may weigh as little as 800 pounds. The buffalo is covered with a thick mantle of long, shaggy hair on its head, neck, and forelegs, with the rest of its body covered by shorter woolly hair. A long black tuft of hair hangs from the adult male's chin. Wild buffalo may live 15 to 20 years on the plains, but in protection they live up to 30 years. A buffalo calf does not become an adult until its fifth or sixth year. Other facts that the pupils may find are that the buffalo faces into the wind or rain in a storm because of its heavy protective coating, and that adult males protect the females and calves by forming a ring around them.

Ask: "How did the Indians tell people about events or important news? Did they announce it at a meeting? Did they put it in a newspaper? Did they send letters? Did they have a written language?" Help pupils find out that Indians had no written language as we know it. However, they did tell some things by drawing pictures of animals, people, or objects. These drawings are called pictographs. Among Indian tribes, different symbols were used to describe happenings. Indians of a particular Indian tribe could understand their own tribe's pictographs.

A pictograph letter of the late 1800s was found. It tells that a Cheyenne father sent \$53.00 to his son for his travel. The pictures show the father and son facing each other. Between them are curving lines like hooks meaning "come to me." Fifty-three small circles represent the \$53.00 being sent to the son.

Ask: "How did Small Bear's father let people know of his son's success at the hunt? Why do you think the Indians smoked a pipe at the feast? Do you think the Indians had more than one kind of pipe?" Tell the pupils that the calumet (kal'yə met), or peace pipe, was another unique part of Indian culture. The word *calumet* is a French word meaning "straw" or "reed." Help pupils find that the calumet was a pipe decorated with tail feathers from an eagle. Ask: "What did the smoking of the peace pipe mean?" (The calumet was a religious symbol used to indicate that all proceedings would be binding.)

Ask: "How could the Indians remember a famous hunt or an especially good hunter? Did they write a book about the event or the person?" Elicit the idea that few Indian tribes had any resources, such as clay, chalk, or surplus skins, to write down stories even if they had a written language. Ask: "How did the Indians know so many old stories and myths?" (They passed them down orally from generation to generation.) Have the pupils read the story of the great race, on pages 158 and 159.

Ask: "Why would a hunting people make up a story about a great race? Would this story have come about before the horse was introduced to the plains?"

THE GREAT RACE

The storyteller told the story of the Great Race in honor of Small Bear's hunt. It went back to the time before the Cheyenne had horses. Then, they hunted on foot and were helped only by their dogs.

But the story of the Great Race was not about dogs. It was about the world of the Plains Indians.

A long time ago, the buffalo challenged man to a race. The buffalo knew that they were the largest animals in North America. They wanted to be masters of the earth. And they wanted all other animals, including man, to be their slaves.

The buffalo invited all the animals of the earth to join in the race. Every living thing gathered in the hills except the fishes and the turtles. These animals did not come because the race was held on land instead of in the water.

The animals took sides. All the fast animals with split hooves—deer, elk, and antelope—sided with the buffalo. So did the eagle, the little birds, and the animals who lived in and on the

ground. The dog, magpie, crow, and hawk sided with man.

All the animals got ready for the race. They painted themselves the colors they are today and they talked among themselves. Coyote said, "If I lose, I'll go up into the hills to live. There, I'll sing this song." Then he howled.

Dog said, "I live in the tepees of man, so it's only right that I run on his side."

The buffalo picked Buffalo Woman to run for them. When all the animals were ready, she appeared. She was painted brown all over. Her head was big and it was covered with shaggy hair that she never combed. Buffalo Woman had very skinny legs. She walked very strangely.

When the animals were in place, Old Buffalo Man hit a big drum. The race began. One by one, the animals dropped out. Not Buffalo Woman! Everyone was surprised at how fast she could run on her skinny legs. Finally, only she and Hawk were left.

At the beginning of the race, Hawk

had shot up into the air. He did not use his wings. Instead, he let the wind carry him. When he neared the finish line, Hawk began to beat his wings hard. He zoomed down to the line. Hawk was sitting there when Buffalo Woman came puffing across the finish line. The side of man had won.

The hawk was treated with respect from then on. So were all the animals who sided with man. Old Buffalo Man said that from that time on, animals

with split hooves would be hunted by man. They would give him their meat, skin, and bones.

Old Buffalo Man also taught man the Sun Dance. He told him that he must hold it every year. It would help the earth to bloom. It would bring grass for the buffalo and wild fruit for everyone.

What kinds of animals lived on the plains? What does this story explain about man and the buffalo?

Ask: "What are 'split hooves'? Help the pupils find out what a hoof is, what it is made of, and why a split, or cloven, hoof is a good kind of foot for animals who have to run quickly and often. Ask: "How many different kinds of animal feet can you think of?"

Ask: "Why do you think the Indians did not have man win the race? Why did the hawk win the race? Why was the hawk on the side of man?"

Suggest that pupils make up their own stories to explain natural phenomena. Ask: "Why did the Indians think the sun was a powerful god? Were there other civilizations that felt that the sun god should be worshiped?"

Tell the pupils that the Sun Dance was the Plains Indians' most important ceremony. All members of the tribe gathered together every year to hold this dance. Ask: "What do you suppose the Indians thought would happen if they did not hold the Sun Dance?" Inform the class that the Indians performed simple dance steps around a special pole. The trunk of a tree was felled in a special ceremony. The dancers went without food or water, dancing until they fell down. Dancers tried to prove how brave and courageous they were. Sometimes, the dance was a dance of thanksgiving for special powers an Indian thought had been given to him.

Activities

1. Organize the class into groups. Make each group responsible for drawing part of a large mural illustrating the activities and sports of the Plains Indians.

2. Have the pupils try to make a bow and an arrow. Give them substitute materials, such as rubber bands, cardboard, and string.



Lesson Objectives: Knowing that the Plains Indian tribes raided each other for horses, for revenge, and for gaining war honors. Appreciating the different things the Plains Indians had to know about their land and its animals in order to live there.

Lesson Skills: observing, making judgments, inferring

Introduction

Ask: “What did the story of the great race tell you was the means of transportation the early Plains Indians used for hunting?” Have the class recall why the horse became so important to the Indians. Ask: “Do you think there were enough horses for all the Indians? Would all the Indians of the plains want horses?”

Lesson Development

Have the pupils read the story of Small Bear’s hunting party on pages 160–166. Point out the marginal note on page 160 concerning the feelings of Indians toward taking horses from another tribe.

Ask: “How do boys and girls learn what is right and what is wrong? How do you think the white man felt when he saw the Indians stealing horses? Would the white man trust the Indian with other goods? Is it easy for you to understand people who are taught values different from your own? Why is it often difficult, then, to live and work with people of different cultures?”

Find out how many pupils have a dog or cat. Ask: “How do you know if your pet is *purebred*? What does the term mean? How does the word *purebred* (a breed, or kind, of

► The Plains Indians did not think that taking horses from another tribe was stealing. It was a brave thing to do. In what ways did having horses make life more dangerous for the Plains Indians?

► The Shoshone (shō shō'-nē) lived in desert areas in Nevada, Idaho, and Utah.

Fun with friends A few months later, Small Bear went up to his friends. “Running Wolf, Lame Deer, Spotted Dog,” he said, “come with me to have some fun.”

“Of course,” they shouted. “Let’s go. What are we going to do? Play a trick on someone?”

“No,” said Small Bear, “something much better than that. We’re going to take some horses.”

The white horse Small Bear did not want lots of horses. He only wanted one horse. A week before, he had been out with a scouting party. They heard someone coming and hid. They saw a large group of Shoshone Indians. The Shoshone chief was riding a large white horse.

The moment Small Bear saw the horse, he knew he had to have it. He thought to himself, “I must act quickly. I know their camp will break up soon.”

Finding the enemy Small Bear spent the following days asking friendly Indians if they knew where the Shoshone camp was. He found out that the Shoshone were camped near a place called the Bent Hills. Small Bear knew that the Bent Hills were a few days’ journey away. He went to his friends and asked them to come with him.

So one night the young braves set out on foot. They only stopped to eat and sleep. They did not want to take the time to hunt.

Small Bear and his friends took care not to be seen. They listened for strange sounds. They looked for signs of smoke, newly turned



soil, or bent grass. They also watched for eagles, because eagles circled around any animals or people they saw on the ground.

The Shoshone camp On the third day, the young braves saw large hills ahead of them. They knew that these were the Bent Hills.

When they reached the top of the hills, the Cheyenne braves saw smoke. They had found the Shoshone camp. The young braves settled in the hills to wait for nightfall. Now and then one of them would creep to the top to see if anyone was coming.

When the sun began to set, Small Bear said, "I think it is time to head for the woods to the left of the camp. It's closer to the camp and we can see better from there." They slowly made their way toward the woods.

► Did the Plains Indians have to know a lot about nature to be good hunters? What would bent grass tell a hunter?

animal that has not been bred with other breeds for a long time) compare with *thoroughbred*?" (a trained or skilled animal that has been bred from a long line of superior animals in the breed) Explain that people have been able to produce horses and other animals that usually look like their parents and have special qualities, such as speed or endurance. Ask: "What kind of a horse do you think the white horse Small Bear wanted may have been—a pinto, an Arabian horse, or a mustang?" Explain that the first use of horses by Indians is credited to the Shoshone, who took possession of some horses from the Spaniards about 1680 near Old Santa Fe, New Mexico.

Ask: "What kinds of things do you think Small Bear and his friends looked for when they went hunting? Would they look for the same things when they wanted to find a camp of other Indians?" (You might expect answers such as tracks of deer, elk, buffalo, and fox. Pupils may also suggest finding feathers for the nesting areas of geese, ducks, and other birds.)

Have pupils discuss the kinds of things a good hunter needs to know. Ask: "Did hunters 'read' signs to tell them where there was wild game?" Tell the class that the bravest and most successful hunters and warriors of the Cheyenne belonged to a special group called the Dog Soldiers. They were responsible for assuring food for the camp in the harshest winter. Ask: "What happened if food was not available? (The village starved.) Was there any place where the Indians could buy food or clothing?"

Discuss the kind of terrain the Indians used for their camps. Ask: "Would it be better to have the camp in the forest or out in the open? Why would it be better to be away from the wooded areas? Why was it necessary for the elders of the village to be concerned about the safety of the women and children when the braves were out on a hunt? Were the Indians of different tribes friendly to each other?"

Have pupils look at the picture of an Indian village on page 161. Ask: "Why did the tepees have an opening in the top? Why did Indians keep their horses and other animals near their tents? Why would a village make camp near a creek? Who would be likely to have the largest tepee in the camp? Why do you think Small Bear chose the biggest tent as the place to look for the white horse?"

Have the class discuss the raid of the Shoshone camp in terms of their own values. Ask: "Do you think it was a brave thing for Small Bear and his friends to steal the horse and plan to fight?"

Have the class perform an experiment on sound conductivity. Ask: "What kinds of materials carry sounds easily? What kinds are not good conductors, or carriers, of sound?" Have the class try beating on the wood of their desks or tables. Provide drums. Use other instruments and articles. Help the class find that sound is conducted by vibration. Ask: "How could Spotted Dog 'hear' hoofbeats through the ground?"

► Why do you think the Cheyenne braves rode in the stream? Why did they split up?

Into the camp After awhile the three friends headed for the creek to the right of the Shoshone camp. The horses were on the other side of this creek.

By himself, Small Bear slowly crawled into the camp. He made his way to the largest tent. As he had guessed, the white horse was tied in front of it.

Capturing the horse He went up to the horse, put his hand on its neck, and talked to it quietly. The horse didn't make a sound when he untied it and jumped on its back. He rode to the other side of the creek and joined his friends. They each had taken several horses. Small Bear took a few more, and they all rode off quickly.

Escape The Cheyenne rode in the middle of the stream for a while. But then they came to a place in the stream where there were too many loose rocks. Small Bear said, "We'd better split up here. Let's meet at Red Rock when the sun reaches its highest point." Everyone agreed.

Tracked by Shoshone They all made it on time except Spotted Dog. He came about an hour later. He said that the evening before he had heard hoofbeats behind him. They were far away, but he thought he had better make his trail hard to follow. And so he was late.

As Spotted Dog talked, he got off his horse and put his ear to the ground. He thought he heard hoofbeats again. Small Bear also listened. "Yes," he said. "They are coming this way."



To the hills The Cheyenne did not want to lead the Shoshone to their camp. So they decided to stay where they were and fight. They moved off toward a group of low hills on their right. They rode into the hills and tied the horses to some bushes. Small Bear then said, "Let's go down to the foot of the hills." He told his friends what they should do on their way. When they got to the foot of the hills, the four braves began to pile up all the loose stones they could find.

Develop the idea of the fort the Indians built. Ask: "Why did the piled-up stones draw the attention of the Shoshone? Did they think it was a fort? How does a fort protect people inside?"

Have the class discuss the kinds of materials that were used to make forts on the plains. Ask: "When the settlers came, why didn't they build their forts out of stone? Did the plains supply enough stones to build large forts? Did they provide many trees for building with? If building materials were so scarce, could the settlers build a lot of forts?"

Ask: "What do you think the Cheyenne thought of the way Small Bear and his friends tricked the other Indians? Do we believe that trickery is a good characteristic? What were some of the tricks Small Bear used to escape the enemy, to trap them, and to leave no signs of their presence? How do some birds and animals lure their enemies away from their nests and their young? Do armies today use tricks to fool their enemy in battle?"

Discuss with the class the values the Indians placed on bravery, the ability to outwit the enemy, and the use of keen hearing and sight. Ask: "How do you think the Indians reacted to poor judgment, cowardice, and being captured?" Have pupils name some of the sports and games we have today in which a touch, a hit, or a tackle is used to put the opposing team member out of the game. Compare coup and touching with a coup stick to a baseball runner who is put out by being tagged with a baseball and to a football player who is tackled. The difference between these games and the Indians' counting coup is that the "touched" player was not necessarily put out of the game. He kept on fighting unless he was wounded or killed.

On the plains, the Indians could achieve higher rank through brave deeds. One of the bravest acts was to touch an enemy with a coup stick. This was more important than killing the enemy. Victory dances were held and warriors were awarded feathers of honor for such acts of bravery.

► Not many Plains Indians had guns at this time. Why do you think Small Bear and his friends did not have any?

Then Small Bear put a moccasin on the ground behind the pile of stones so that only the tip of the toe showed. Instead of hiding behind the piled rocks, three of the Cheyenne ran into the hills to take cover. They brushed away their tracks with branches as they went. Small Bear hid behind some bushes in front of the pile of stones.

Six braves They waited for about two hours. Finally, six Shoshone braves came into sight. Two of them carried guns. When they neared the hills, the Shoshone split up. One went to the right of the hills and one went to the left of the hills. It looked as if they were going to circle the hills and come around from the back.

The fight The two Shoshone warriors with guns rode straight up to the pile of stones. They shot at the stones as they rode. The Shoshone braves were easy targets for the Cheyenne hiding in the hills. One horse was



hit right away. It fell to the ground, pinning the rider's leg under him. The other Shoshone with the gun was hit. Then the other Shoshone braves knew they had been tricked. They jumped off their horses and ran for cover.

Counting coup As they ran, Small Bear jumped out and hit the pinned rider with a twig. This was counting first coup. A coup was a war honor. Counting coup was one of the bravest things a Plains Indian could do. It meant more than killing a person or scalping him. Taking a horse from the front of a tent was also a first coup.

Wounded Lame Deer had not taken part in the fighting so far. He had sat still, well hidden, watching the back of the hills. He finally saw something move. It was one of the other Shoshone braves who had circled around the hills. He was making his way down from the other side.

Lame Deer hit him with an arrow. He ran up to count coup, shouting "Ha! That'll teach you to try to trick a Cheyenne!" Suddenly, an arrow hit Lame Deer in the shoulder. He had not seen the other Shoshone sneak up on him. But Running Wolf had seen what had happened and came to the aid of his friend. He hit the Shoshone brave.

Meanwhile, one of the Shoshone at the foot of the hills had been able to pull out the brave who had been pinned under the horse. After he jumped on his horse, he pulled up his friend. They rode off. The fight was over.

► Coup (kü) is a French word. It means a "blow" or "hit." Where do you think Indians learned a French word?

► The Cheyenne were once a peaceful people. What do you think made them so warlike?

Activities

1. Have the class organize a "Day in the Life of an Indian Boy or an Indian Girl." From pictures, have them make ornaments and designs for clothing. Let each pupil choose activities he or she wishes to join in, such as cooking, gathering firewood, hunting, and other jobs. Pupils might make replicas of the foods, bowls, utensils, and the tepee in order to appreciate the Indian's dependence on things in the environment around him.
2. Provide the pupils with uncolored maps of the United States. Tell them to locate on the map the areas where the Cheyenne, Shoshone, and Sioux lived. Use different colored tepees to show where the tribes lived.

Answers (p. 166)

1. Ancestors of the North American Indian are thought to be the first people on this continent. Scientists believe that they entered North America from Asia over a land bridge in the Bering Strait between Asia and Alaska.
2. Plains are mostly flat, dry grasslands. In the United States, the area from the Rocky Mountains to the Mississippi River is considered part of the Great Plains.
3. The first horses were brought to America by the Spaniards in the 1500s.
4. With horses, the Indians could hunt buffalo and wild game at greater distances from their camps. Horses gave them greater mobility, enabled them to transport more, and helped them hunt for more food.
5. The Cheyenne were a tribe of Indians who had come from eastern Wisconsin and Minnesota to the Great Plains.
6. Plains Indians were basically nomadic Indians who followed the buffalo herds. Their camps were easily moved because their tipis were made of buffalo hides stretched over poles.
7. The Plains Indians had to know about nature because they depended upon their environment for food, water, and shelter.
8. A coup is a blow or hit upon an enemy. It was a way of showing bravery and of counting war honors.
9. Cheyenne women collected water, firewood, and roots for food. A few tended crops of beans, corn, squash, and tobacco. Most hunting was done by the men.



Back home Small Bear shouted, "We must go!" So the Cheyenne braves rounded up the horses they had taken and the guns the Shoshone had left behind.

They rode for the rest of the afternoon and night. They came to their camp the next morning. Before they reached it, they blackened their faces with soot. This was to tell everyone they had been successful. Then they charged into camp.

They passed young women and girls collecting firewood and roots. All stopped what they were doing and ran into the camp behind them.

Everyone was excited. The young braves had gained great honor. Small Bear had brought the whole group back safely. Only Lamé Deer had been wounded.

Small Bear became a great warrior. He raised a family. His children did not live the kind of life he did. By that time, the way of life the Cheyenne knew and loved was dying.

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1. Who do scientists think were the first people in North America? From what continent did they come?
 2. What is a plain? In what part of the United States are the Great Plains?
 3. Who brought the first horses to the Americas?
 4. How did horses change the way of life of the Plains Indians?
 5. Who were the Cheyenne? Where in the United States did they live before they moved to the plains?
 6. Why did the Cheyenne keep moving from place to place?
 7. Did the Plains Indians have to know a lot about nature? Why?
 8. What is a coup?
 9. What kinds of work did the Cheyenne women do? Did they also hunt?

The Indians and the Settlers

Lesson Objectives: Understanding that the search for land and gold brought white settlers into Indian lands. Appreciating the hardships of the westward journey for white settlers. Recognizing the beginnings of the underlying differences that brought the Indian and the white settlers into conflict.

Lesson Skills: comparing, contrasting, recalling, evaluating

Introduction

Ask: "What was the United States like about 200 years ago? When did the Revolutionary War begin? Why wasn't there any interest in the Great Plains in 1776?" Tell the class that at that time, westward expansion was limited to the area east of the Appalachians. (Have the pupils find the Appalachian Mountains on a land map of the United States.) Except for a few pioneers who settled along the Ohio River in 1788 and those who raised cattle in Texas and the Southwest in the 1820's, few settlers ventured far beyond the Mississippi River until around the time of the Civil War.



Lesson Development

Ask: "Why would it be very difficult to interest people in leaving their homes, families, and friends to cross deserts and mountains and to face unknown dangers to reach the Great Plains? Would you be anxious to make such a journey?"

Have the pupils read pages 168, 169, and the first eight lines of page 171. Tell them to find the two reasons why people east of the Mississippi would not want to go West and three reasons why it was becoming necessary for Easterners to make the dangerous trip.

Set up a time line of some important dates that encouraged a movement westward. Tell the class to include (1) 1803, the Louisiana Purchase; (2) 1760 to 1850, the Industrial Revolution, which eliminated many jobs; (3) 1848, the gold rush in California; and (4) 1862, the passing of the Homestead Act, which gave land to settlers. Have the pupils discuss these events and help them find out why they spurred the westward movement.

Ask: "Which of the events just mentioned made men want to take their families west with them? (event 4) Which special event opened up new and unexpected territories to the nation? (event 1) For which of the events would men prefer to go West alone? (event 3) Which event forced men and their families to find new farmlands and seek new jobs?" (event 2)

Ask: "What is a desert? Can crops be grown there easily? Would Major Stephen H. Long's description of the Great Plains as the 'Great American Desert' help draw settlers to the region?" Tell the class that today, the "Great American Desert" supplies from half to three-fourths of

► Why do you think he had described the plains as a desert?

► Where could people who wanted more land go? Where could they find new ways to earn a living?

About 200 years ago, white settlers from the East Coast began to settle in the Great Plains. They brought cattle and barbed wire for fences.

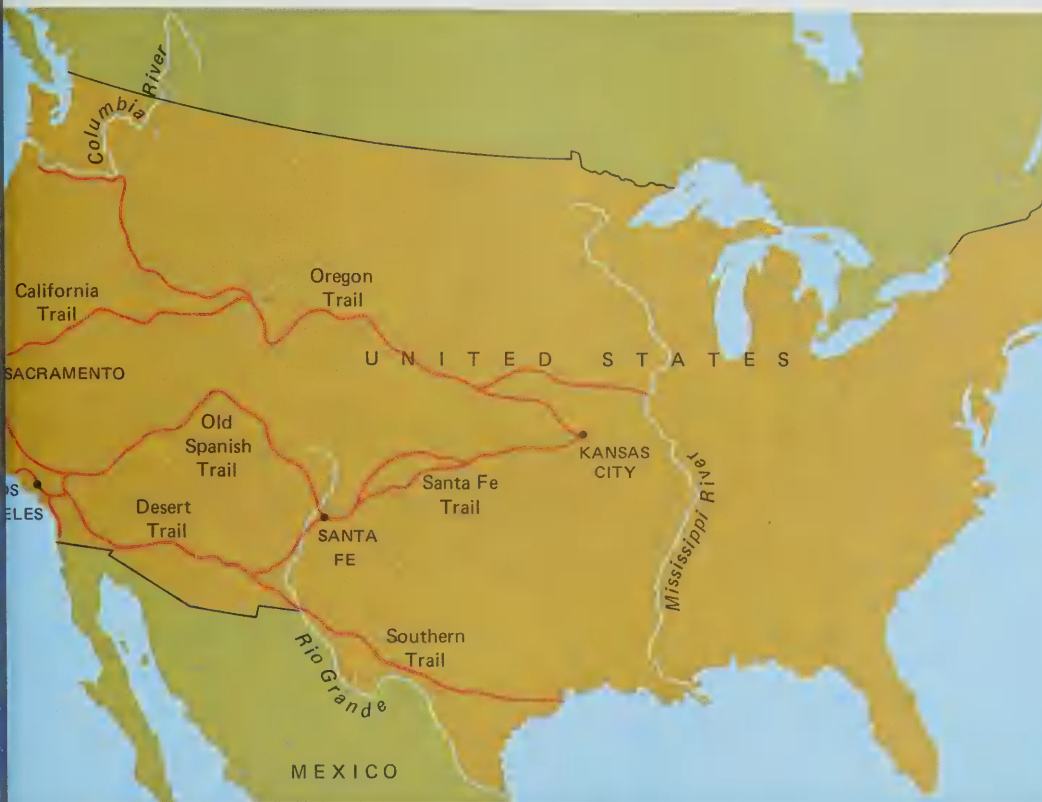
The Plains Indians knew that their horses and guns had come from the white men. They also learned that it was easier to boil water in a kettle than in the stomach pouch of a buffalo.

Explorers In spite of all this, many Plains Indians had never seen a white man. Until a little more than 100 years ago, few white men lived on the plains except for some traders and fur trappers. This was because the first white men to explore the area did not say many good things about the plains. One of them, Major Stephen H. Long, described the plains as the Great American Desert.

These same explorers described the land along the Pacific Ocean. They said it was good land and that it would grow many crops. By the early 1800s, the best land in the East had been taken. Eastern cities were becoming crowded. New machines and new ways of doing things were putting people out of work.

To the west The first wagon train of settlers left for California in 1841. Look at the figures on the chart below. What do they tell you?

YEAR	NUMBER OF SETTLERS TO GO WEST
1841	81
1842	more than 100
1843	more than 1,000



The settlers traveled west by three major routes. Look at the map above. What are the names of these routes? Where did they begin? Where did they end? Gold was discovered in California in 1848. Do you think more people went west after gold was discovered? Why?

The journey The settlers traveled in covered wagons. The wagons were large enough to carry an entire family. How do you think the settlers got something to eat on their trip west

► Look again at the map. Could the settlers have gone another way? Why did they choose the routes they did?

the wheat, oats, soybeans, corn, hogs, cattle, and dairy cows produced in the United States. Ask: "Was the Major's description accurate?"

Have the class look at the map on page 169. Ask: "Which of the trails would be the fastest way to get to Sacramento? If one inch on the map equals 500 miles, how long would the Oregon Trail be from its starting point to the end in Oregon? Would you estimate 1,000 miles, 3,000 miles, or 2,000 miles? Which trail would be the hottest in summer?" Have pupils look at this area on a rainfall map to help them make their decisions. Ask: "Which trail would you take if you were in a hurry to get from Kansas City to Los Angeles? How would you go to get to New Orleans at the mouth of the Mississippi River?" Have them consider rivers as some of our best "highways."

Suggest the following activity to pupils: "Pretend that you are traveling in a Conestoga wagon to Fort Laramie on the Laramie tributary of the North Platte River. (Have the class find the North Platte River on a land map of the United States. Have them find Fort Laramie.) Your father will be employed there as a wheelwright (a person who makes and fixes wheels and wheeled vehicles). He will refit (repair and get new equipment for) the wagons of the settlers traveling across the Continental Divide. What will you take with you on your journey from Kansas City to Fort Laramie? What tribes of Indians might you see on the way? (As a hint, tell the pupils that their journey will end 100 miles north of the present-day city of Cheyenne, Wyoming.) What will the men on the wagon train do to supply fresh meat for their families? What kinds of game might the men find?

What will they eat if they cannot find fresh game? How might the women and girls add to the diet of meat and starchy breads whenever the train stops and people set up camp? Why would a wheelwright be useful on a long trip across rough country?"

Have pupils study the model of the Conestoga wagon on page 170. Ask: "What kinds of animals were used to pull the wagon?" (Although oxen are shown in the picture, horse and mule teams were used also.) Tell the class that the original Conestoga wagon was built in the colonies in the east to haul freight. The sag in the center of the canvas top helped keep the contents of the wagon from spilling out when ascending or descending a hill. The early wagons required as many as six horses to pull them. The prairie schooner of the later nineteenth century, which looked like a heavier Conestoga wagon, was "home" to the traveling pioneers. Prairie schooners were built to be able to ford shallow streams and float across deeper rivers.

Ask: "What were some of the most important things the pioneers had to carry? Did they search carefully for water for the animal teams and the families? Why was it important that they find firewood?"



if they ran out of food and needed some more?

The settlers hunted animals, crushed the grass, and scared away herds. They also brought new diseases to the plains, like smallpox. The Indians were so upset by these things that they began to attack the wagon trains. As a result, the trip west became more dangerous.

Trying to make peace The settlers traveling through the plains wanted peace. They asked the Indians to send their leader or someone who could speak for all Indians to meet them.

The spokesmen for the Cheyenne and the white men met at Fort Laramie, Wyoming, in 1851. Neither side understood the other.

The settlers could not understand why the Indians were so upset. All the settlers wanted was permission to build roads. They also promised to pay the Indians lots of money if they would stay in one place, away from the wagon trains.

The Indians did not want roads through their lands. Also, they did not understand what “buying and selling land” meant. When Indians said “my land,” they meant the place where they lived and hunted. Even though they used it, it was not theirs to give away.

War Bad feelings between the white men and the Indians grew. Some Indians felt they had to drive the white men off their lands forever. Others wanted to live peacefully with them. But some of the peaceful Indians were killed and the wars became worse.

■ Do you think life on the plains was becoming harder? Why or why not?

■ Would roads make hunting more difficult for the Plains Indians? How?

Activity

Using the models shown here, have pupils make a replica Conestoga wagon. Tell the pupils to write a creative story for a “home movie” on “My Family’s Adventures on a Wagon Train to Oregon.” Have the pupils role-play parts of the journey on the trail.

LESSON 6 (pp. 171–173)

Lesson Objectives: Becoming aware of the lack of understanding between the settler and the Indian. Realizing the reasons for that lack of understanding.

Lesson Skills: map skills, reading graphs, recalling, analyzing problems, comparing and contrasting

Introduction

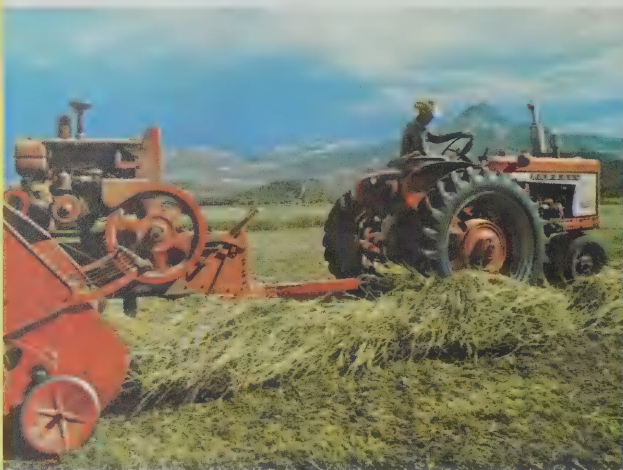
Tell the class: “Suppose the leaders of the wagon train met a Cheyenne hunting party on the journey west. Do you think the Indians and the wagon train leaders could talk to each other? Are people uneasy with another group whose language they cannot understand?” Inform the pupils that the Plains Indians developed a language for communicating with strangers. Hand signs were used so that different tribes could “talk” to one another.

Lesson Development

Ask: "What uses did the Indians make of the land? Why would the United States Government promise a great deal of money to the Indian for the land?" Have the class read pages 171–173 to find some reasons for the lack of understanding between the Indians and the settlers. Tell the class that a treaty was signed in 1851. It was an agreement between the Government and 10,000 Plains Indians of different tribes to guarantee the safety of white travelers on the Oregon Trail. In exchange, the Indians received an annual payment and protection against white bandits.

Form the class into two groups. One should represent the Indians who are upset about settlements and roads being established on their land; the other should represent the settlers who want to build farms and towns with roads connecting them. List important points for each side. Try to get the pupils to understand why each group was a threat to the other.

Prepare the stage for the confrontation. Tell the class: "You who are the Indians are on a hunting party and you see a wagon train of people protected by bluecoat soldiers with many cannons. They are coming into your hunting grounds. Although the young men want to fight, the chief wants to talk to the bluecoats. You who are soldiers see the Indians coming at you on their ponies with their headresses and weapons, and looking strange and angry. What would the soldiers do if they thought they were being attacked by 'savage Indians'? What would the Indians do when they saw friends being slain by the 'two-faced' soldiers? What would the friends of the soldiers at the fort do about the death of



Often prairie farmers and cattlemen were enemies. New machines made it easy for farmers to work acres of land. Cattlemen wanted this land for their herds.

◆ A reservation (rez ərvā' shən) is land that has been set aside for Indians to live on.



Custer's last stand In 1876, the northern Cheyenne helped defeat General George A. Custer at Little Bighorn in Idaho. After this battle, the people in the East became angry. They decided to punish all Indians. The war went against the Cheyenne. They were forced to surrender, and their land was taken away. The Cheyenne were moved to two reservations — one in Oklahoma and one in Montana.

It was not just the wars that ended the Plains Indians' way of life. It was other things, too. Look at the pictures above. Why did the settlers want the plains?

End of the buffalo The first railroad across North America was finished in 1869. It went as far as Ogden, Utah. Railroad engineers discovered that the buffalo herds got in the way. Sometimes trains had to wait for hours, even days, for the herds to cross the tracks. Farmers and cattle drivers also thought the buffalo

were in their way. They began to kill the buffalo. Look at the chart below.

YEAR	NUMBER OF BUFFALO
1830	75 million
1850	50 million
1880	Almost none
1970	35,000

What happened to the buffalo? What did this mean to the Plains Indians?

THE PLAINS INDIANS TODAY

The reservation Not all Indians live on reservations. Those that do, live different kinds of lives. Some reservation land given to the Indians turned out to be good. The owners of these reservations became wealthy. Most reservation Indians, however, are poor.

Most of the land given to the Cheyenne was not good land. It was too dry for farming. How could the Indians get jobs or money if their land was poor?

For a long time the Indians had little say about what happened to them. They were sad, and many felt they had no purpose in life. They had no voice in government because they did not become citizens of the United States until 1924. Even then, all Indians were not able to vote until 1948.

The Indians began to form groups to fight for their rights. For many, the fight has been successful. Some have won back land taken from them. Others have won the right to decide

their comrades? How would the Indians pay back the soldiers for the death of family and friends?"

Activity

Obtain diagrams of the Plains Indians' sign language. Have the class set up a make-believe meeting between two different groups of Indians. Have them try to convey a message without words.

LESSON 7 (pp. 173–175)

Lesson Objectives: Understanding the position of the American Indian in today's world. Becoming aware of the economic, political, and social goals of present-day Indians.

Lesson Skills: making judgments, synthesizing new ideas, classifying, comparing

Introduction

Ask: "If you were an Indian, would you rather live with other Indians in the country on a reservation under the protection of the government, or would you rather live in the city, and take the chance that you will fail to earn a living?"

Lesson Development

Tell the pupils to read pages 173–175. Have them write to the Bureau of Indian Affairs to find where reservations exist today and the number of Indians living on them.

Compare the former hunting and nomadic life of the Cheyenne to their later ways of life, first on the unproductive lands of Oklahoma and later in the farmlands of Montana. Have the class decide

whether reservation life had more advantages or disadvantages for the Indian.

Have the class research life on reservations to see what it is like. If there is a reservation nearby, plan a visit to it with the class to see the schools, homes, and other facilities. Except for the oil leases of the Oklahoma Indians and the land rights given to the Indians in Palm Springs, California, the class will find that most Indians on reservations are very poor. In fact, food lifts were organized for the Navajo a few years ago.

Have the class collect pictures and stories about life on the reservations in the 1880s. Compare these with present-day life on the reservations. Also have the pupils find out what has been done in the last few years to help Indians become assimilated into the culture of large cities, to find jobs, and to find housing.

Look at the pictures on page 174. Ask: "Do you think that Indians who have a modern education and training could do the same job as other highly trained specialists of the United States?"

Ask the pupils to help you list the contributions the Indians have made to the English language. Ask: "Do you know any Indian words, expressions, or place names we use today?" They include *war-path*, *war paint*, *paleface*, *bury the hatchet*, *big chief*, *tobacco*, *moccasin*, *chipmunk*, *hickory*, *tomahawk*, *Chicago*, *mackinaw*, and *Mississippi*. Have the class discuss or find out what these words mean.

Activities

1. Have the class research and write a biography of the life of a well-known Indian, particularly one who is currently active.



Many American Indians hold jobs as teachers, office workers, or herders. They no longer live in the old way. But they remember the past by holding festivals like the one shown above.



what goes on in their reservations and what is taught in their schools.

The Indians feel that a lot has yet to be done. Some want to be paid for all the harm that was done to them. What do Indians want? Read the following. It is part of what was written on an Indian sign. It tells why Indians think they need to gain more power. It tells what many Indians are fighting for.

WHAT IS INDIAN POWER?

INDIAN POWER means pride in my Indian heritage, pride in my Indian parents.

INDIAN POWER means a richer, healthier life. INDIAN POWER means better education and a meaningful job.

INDIAN POWER means a desire to change from the way things are now.

INDIAN POWER means holding on to our land.

INDIAN POWER means LIFE.

◆ Heritage (her' ə tij) is all the ideas and customs that are handed down to a person from his ancestors.

◆ Are these good things to fight for?

1. Who called the plains a "Great American Desert"?
2. Why did the settlers cross the plains? Why were they leaving the eastern part of the United States?
3. What kinds of transportation did the settlers use to travel west?
4. Why did the Indians not want the settlers to cross their land? What

damage did the settlers do to the land?

5. Did the settlers and the Indians find it difficult to make peace?
6. Give three reasons why later settlers wanted land on the plains.
7. Why did the railroad builders want to destroy the buffalo?
8. What is a reservation? Why were the Indians forced to live on them?

2. Help the pupils make a time line showing the struggle of the American Indian for his rights.

Answers (p. 175)

1. Major Stephen H. Long called the plains a "Great American Desert."

2. The settlers crossed the plains to reach the gold fields of California and to find new farm land. The crowded conditions of the East had closed out new farmers from the rich soil. Work had become scarce for unskilled laborers, too, in the East.

3. Conestoga wagons or prairie schooners carried families and their goods west.

4. When settlers crossed the plains, the buffalo were frightened away so that the Indian could no longer find the herds for his needs; grass was crushed so that buffalo could not return to the plains.

5. Because of the difference in their cultural backgrounds and their lack of a common language, the Indians and the settlers were unable to have a lasting peace.

6. Later settlers wanted the broad plains for raising cereal grains; some wanted land for grazing cattle; people needed the land to build railroads across the country.

7. Railroad builders felt that the buffalo had to be destroyed because of the delays caused when the herds crossed the tracks. Buffalo also brought Indians who interfered with the railroad workers.

8. Reservations are the government-owned land on which Indians were placed. The Indians are protected there and given an annual allowance. By forcing the Indian to live on the reservation, the government vacated the Indians' own land for the white settlers, and the fear of the Indian ceased.

INVESTIGATING THE UNIT

Gathering Information

Find out from the library what the weather is like on the plains. Is it hot or cold? Does it change a lot? What weather conditions on the plains have damaged crops and destroyed farms? Can modern technology solve these problems?

Grouping Information

Find out more about how the Plains Indians used the buffalo. Look in a library or museum. Make lists of different ways the Indians used buffalo. For example, in one list write down the ways they used it for food. In others, list the ways they used it for making tools, weapons, houses, and clothing.

After you have finished, make one more list. In it, include the things the Indians needed but could not get from the buffalo. Did the Plains Indians get almost everything they needed from the buffalo?

What Does the Map Tell You?

Look in an atlas and find Montana. Now look at the southeastern part of the state and find the Tongue River

Reservation. That is where the northern Cheyenne now live.

Draw a map of Montana and mark where the Tongue River Reservation is. Next, look at the maps that show the natural resources and industries of the United States. Using these maps as a guide, mark the resources—crops, minerals, animals, and industries—on the map you have drawn. Is the reservation land rich in natural resources?

Using What You have Learned

Imagine you are making a filmstrip about transportation on the plains. Draw a group of pictures that show how changes in the means of transportation changed the life of the Plains Indians. Start before the horse was introduced. End with the present.

Comparing and Contrasting

Pretend you are a Plains Indian parent. You are telling your children what life was like before you came to live on the reservation. Explain to them how different their life would have been if they had been born then rather than now.

UNIT 6

READING LESSON: WORK-STUDY READING— SCANNING FOR INFORMATION

Purpose

Pupils must learn to scan a chapter for important information as they continue reading for social studies.

Introduction

Say: "As we get older, we have more and more reading to do. Sometimes we cannot afford the time to sit down and carefully read every word in a chapter. So we look quickly through the material to find certain information."

Development

Distribute the following study guide designed to accompany pages 182–189:

1. What does the word *Eskimo* mean?
2. Name the animals that live in the Arctic and the seasons when they are hunted.
3. Which animal skin was used to make clothing?
4. What is the name of the weapon used to hunt whales and seals?

5. What is the name of the special hunting boat used by the Eskimos?

Tell the class: "When reading to find a specific answer to a question, move your eyes rapidly over the page, line by line, looking for a particular name, word, or phrase that will answer a particular question. This is called scanning, and it is a form of speed-reading. When we scan, we do not read every word. We just sort of 'look at' the lines, looking for the clue-words. Then we stop and read more closely."

Application

Develop the following as logical clues to look for in order to answer the questions in this particular study guide. (Before beginning a study guide, questions should be surveyed and possible clues decided on.)

Question	Look for
1	<i>Eskimo</i> , or a phrase in quotation marks
2	names of animals, names of seasons
3	<i>clothing</i>
4	<i>weapon</i> or <i>hunt</i>
5	<i>boat</i>

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America, Knud Rasmussen recorded the legends and songs of the Eskimos whose life he shared. The best of these have been retold for this collection by the poet Edward Field.

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father to a neighboring village, but the grandfather dies as they near the end of the journey.

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READING LESSON PLANS

THE ESKIMOS AND THE ASHANTI

People can live in so many places,
In wet tangled jungles or vast snowy spaces;
They can farm for their food under tropical trees,
Or hunt for the seal on ice-covered seas.



Knowledge Objectives

Understanding that people have found ways to live in difficult environments, such as the Arctic and tropical rain forests.

Knowing that the Eskimos came to North America from Asia.

Understanding how people can live without food crops or wild edible plants.

Learning that the Ashanti are a people who live in Ghana, West Africa.

Understanding that the Ashanti grew rich from the gold and slave trades.

Understanding how the capture of Ashanti by Britain brought an end to the Ashanti way of life.

Value Objectives

Valuing the importance of animals to people and understanding that unlimited hunting can result in their extinction.

Appreciating how the Eskimos and the Ashanti have incorporated the old ways with the new.

Skills

Analyzing information about the Arctic and about rain forests.

Comparing and contrasting the ways in which the Eskimos and the Ashanti adapted to their environments.

Drawing inferences about the relationships between custom and environment.

Reading trade-route and regional maps.

Reading time lines and diagrams.

LESSON 1 (pp. 178-182)

Lesson Objective: Understanding that people have found ways to live in different environments, even very difficult ones such as the frozen lands of the north or tropical rain forests. Knowing that the Eskimos came to North America from Asia.

Lesson Skills: comparing, interpreting pictures, inferring, reading maps and graphs, analyzing

Introduction

Have the class fold pieces of drawing paper in half. In one section, have them draw a picture of something they like to do in the hot summertime. Have them draw something they like to do in cold winter in the other half. Ask the pupils to describe the kinds of clothes they wear during these two seasons. Let them discover that people cannot live or dress the same way in hot weather as in cold. Have the pupils indicate which season they like best and explain their preferences.

Lesson Development

Have the class look at a relief map of the world. As the pupils answer the questions you ask them about the areas under discussion, list their answers on a chart, in order to compare them after the unit is completed. Have the pupils locate the Arctic region. Ask: "What kind of land do you think the Arctic has? Would it be easy to find things like wood or stone to use in making homes in the cold, icy lands of the north? What kinds of animals would you expect to find there?"

Now have the pupils find the continent of Africa on a relief map of the world. Direct their attention to the legend. Ask:

◆ ə shant' ē

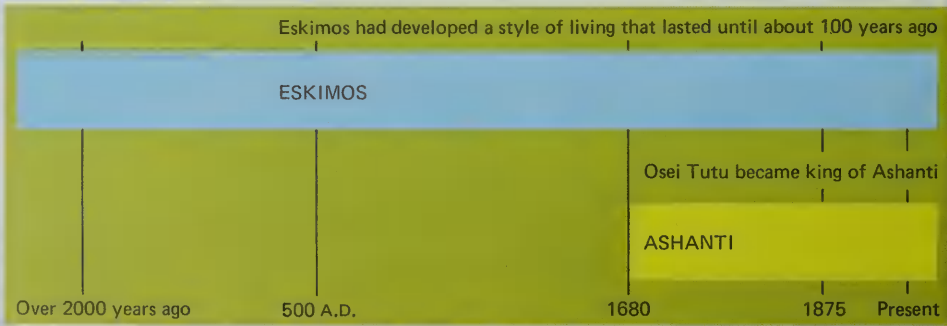
◆ gän' ə

In this unit you will read about two groups of people—the Eskimos of northern Alaska and the Ashanti of Ghana. The Eskimos and the Ashanti live in very different regions. One is very hot, the other very cold. Both are difficult places in which to live. But because the lands are so different, the people who settled them developed different ways of living.

In northern Alaska, the Eskimos became hunters. They moved from place to place looking for food. They did not set up a strong government or build beautiful cities.

The Ashanti people became farmers. They did not move very often. When they did, they did not go very far. But they conquered other lands and built a beautiful capital and a powerful kingdom.

As you read this unit, try to figure out why the early Eskimos did not live in towns, and why the Ashanti did. Ask why it was that the Ashanti had kings, while the Eskimos had no strong leaders. Finally, ask what special ways these two peoples found to help them live in their difficult surroundings.



The Eskimos: A Changing Culture



"Is Africa closer to the equator than the lands of the Arctic? Do you think it will be as cold in Africa as it is in the Arctic? Find the low-lying western coast lands of Africa. Will people wear the same kind of clothes here as in the Arctic? What will they use to build homes? What kinds of animals live here?"

Have the class read page 178 and look at the picture on page 179. Tell them to look at the time line at the bottom of page 178. Ask: "What does it tell us?" Have the pupils discover what a time line is. Have them make similar lines for themselves. Have the pupils start with their birth and include the date they started school and any other year that something important happened to them, up to the present.

Suggest that the class look at the picture on page 179 carefully. Ask: "What do you see in the picture? What can you tell about the weather? Does the clothing of the people in the picture differ from our usual clothing? How is it different?"

Tell the pupils that Eskimo clothing is generally loose except at the neck and around the ankles and wrists. This prevents body heat from escaping and keeps the wearers warm. Once, both men and women wore fur trousers and skin shirts. In coldest winter, two shirts were often worn; one had fur on the inside and the other had fur on the outside. Ask: "Are any parkas shown in the picture?" Tell the class that *parka* is an Eskimo word meaning "skin" or "outer garment." Have the pupils point to the parkas and describe what these are in their own words. Explain that women often carried babies in the large hoods of their parkas.

Mittens, stockings, and boots completed the outfit. Ask: "Do you think all of this would be heavy to wear? Why do you think the people in the picture are not dressed in all of the kinds of clothing we described?"

Have the class read page 180. Ask the class to tell you what the following sentence means: "Admiral Robert E. Peary was the first explorer to reach the North Pole." Ask: "What is the North Pole?" Tell the class that the North Pole is the imaginary point at the top of the world where all the earth's lines of longitude meet. Have the pupils find that point on the globe. The Arctic region is all of the area around this point, which is ice-covered ocean. It also includes land and water as far south as the Arctic Circle. The only plants in the Arctic are coarse grasses and mosses. Small flowers may grow for a brief time in wet areas. The few trees that grow are stunted. Many people are surprised to find there is little snow in the North. The reason is that annual rainfall there is only about 10 inches. That means there is not enough moisture to turn to snow. Instead there is ice and frost. Provide pictures that will help the class discover this.

◆ A habitable (hab'ətə bəl) land is a place where people can live.

◆ Look at the map below. Are there many countries near the Arctic Circle? Find the equator. Are there many countries near it? In what part of the world are most of the world's countries located?

This land of ours
has become habitable
because we came here
and learned how to hunt.
Even so, up here where we live
life is one continuous fight
for food and for clothing
and a struggle against bad hunting
and snow storms and sickness.
But we know our land is not the whole world.

These words were written by an Eskimo who lived long ago. Today it is part of Eskimo poetry. As you read this unit, ask yourself these questions: Is Eskimo life easy or hard? Is it changing? Would you like to live as the Eskimo people once lived?

The Eskimos are a strong and friendly people. They live in the cold lands of the Arctic. The Arctic is the area near the North Pole. Hold a globe of the world in your hands and look down at it. The Arctic is the area at the top of the globe. Look at the map on this page. Can you find the Arctic Circle?



WHERE THE ESKIMOS CAME FROM

Eskimos live in four different places in the Arctic: Siberia, Alaska, Canada, and Greenland. Find these places on the map on page 180. For many years no one knew for certain how the Eskimos came to live in these empty and frozen lands. But using their knowledge of science and history, scientists have tried to find an answer to this puzzling question.

Solving the mystery Where did the Eskimos come from? To answer a scientific question like this, a scientist does one thing first. He studies everything he already knows about the question.

Pretend that you are a scientist. You already know the four places where the Eskimos live. Here are some other things to know about the Eskimos. All Eskimos speak the same kind of language. All Eskimo people first lived in central Asia. Look again at the map on page 180. Can you find central Asia? Now do you see why we have a puzzling question? How did the Eskimos get to the lands they live in now?

This is what scientists think. Many thousands of years ago, groups of people moved north from their homes in central Asia to Siberia. Find Siberia on the map. There they settled and began to hunt and fish for food. Look once more at the map. You will see that a small body of water separates Siberia from Alaska. What is this body of water called? Do you think that people living thousands

♦ sī bir' ē ə

Have the class read pages 181–182. Ask: “Do you think there are many Eskimos in the world?” Inform the class that there are about 60,000 Eskimos. Eskimos have lived in Arctic regions for the past 2,500 years. Different groups of people from Asia began coming across the Bering Strait 20,000 or more years ago. Ask: “Did people begin coming to North America a long time before the Eskimos arrived? Do you think the fact that the Eskimos live in the cold north might have anything to do with their being the last to arrive? Do you think they stayed in the north because they preferred the cold?”

Tell the pupils: “Pretend that you are a *nomadic*, or traveling, group out on a hunting party many hundreds of years ago. What would you do if the game you were hunting kept moving further away than you expected? Would you follow the game?” Some scientists think that this is how the Eskimos came to the Arctic regions.

Provide desk maps of the polar regions. Have the class label Siberia, Alaska, Canada (including Labrador), and Greenland. Have the pupils draw arrows indicating the directions they think the Eskimos traveled to get from Central Asia to all the places where they now live.

Activities

1. Have the class go to the library and find books describing Admiral Peary's journey to the North Pole. Have the pupils discuss what they read, describing the difficulties Peary endured traveling and living in the Arctic lands.

2. Have the pupils research and prepare a bulletin-board display of the types of land, plants, and animals found in the Arctic. Help them find out about the tree line.



◆ bir'ing strāt

◆ A strait is a narrow body of water between two pieces of land.

of years ago could have crossed such a body of water? How could they have done this?

The Bering Strait The Bering Strait is only 40 miles wide. Today, Eskimos use boats to cross this narrow body of water when they hunt. But many scientists think the early Eskimos did not need boats to cross the Bering Strait. Many scientists think that early Eskimos walked from Siberia to Alaska!

Scientists think that thousands of years ago, Asia and North America were connected by a thin strip of land. They call a connecting piece of land like this a **land bridge**.

LIVING IN THE ARCTIC LONG AGO

The Asians first walked over the land bridge many thousands of years ago. They slowly wandered through North and South America. The last group to come were the Eskimos.

LESSON 2 (pp. 182-189)

Lesson Objectives: Understanding how people can live without food crops or wild plants to eat. Recognizing that the Eskimos have learned to utilize the resources of the north to satisfy their needs.

Lesson Skills: interpreting pictures, evaluating, drawing conclusions, analyzing

Introduction

Ask: "What kinds of animals have been used for transportation in the past? are used now?" Expect such answers as horse, ox, elephant, mule, dog, and others. Ask: "Why can't horses, oxen, and elephants live easily in the Arctic? What kinds of food do they eat? What do dogs eat?"

Lesson Development

Tell the class to look at the pictures on page 183. Inform them that some of the pictures show a unique way of traveling. Ask: "What is it? How else do the Eskimos travel about in the Arctic?" (by snowshoes and several kinds of boats)

Explain that the dogsled was fashioned completely from materials of the North. The sled itself was made of driftwood. (Make sure the pupils know what driftwood is.) The sides, back, and bottom were lashed together with ties made from walrus skin. The two long runners on the bottom of the sled were covered with strips of ivory pieced together or, if ivory was not available, rolled sealskin. The runners were iced carefully. The ice was rubbed by hand or with a snow knife to make it as smooth as glass. The runners had to be kept icy. If the ice cracked, the runners had to be re-iced.

Tell the pupils to look at the picture on the top right of page 183. Ask: "How are the dogs in the picture tied to the sled?"



Few plants grow in northern Alaska because of the cold and the snow. The Eskimos survive by hunting. Dogs help them. Teams of dogs pull heavy sleds across the snow for long distances. They also protect their owners.



Inform the class that Eskimos hitched their huskies in one of two ways. The oldest method of hitching sled dogs was to fan the dogs out at the ends of long traces (straps or lines). In a polar bear hunt, the dogs could be released quickly to chase the bear and hold it at bay.

Other groups of Eskimos hitched the dogs on either side of a single long trace. The driver walked beside or behind the sled and sometimes rode on the sled. Up to 20 dogs could be hitched this way to pull heavy loads.

Ask: "Have you ever been in a car that skidded or became stuck in the snow? Why are dogsleds a better means of transportation for the Arctic than cars or trucks? Do you think the Eskimos of today want to own snowmobiles?" Tell the class that while sleds are still used as Arctic transportation, large airplanes and small planes with floats or skis are used throughout the north.

Have the class read page 184. Tell the pupils that Indians also live in Alaska, but not as far north as the Eskimos. It was the Abnaki Indians of Northern Canada who gave the name *Eskimantic*, or "raw-meat eaters," to the *Inuit*. Later, the French wrote the name *Eskimantic* as *Esquimaux*.

Have the class look at the diagram of permafrost on page 184. Help them see how difficult it would be for trees to put down deep roots. Ask: "Do tree roots often go down more than a foot into the earth? Do you know why plants and trees have roots? (to draw up minerals dissolved in the soil) Can trees that do not have deep roots get enough food to grow? Why do you think many of Alaska's designs use the stunted cedar and the cabin as symbols of Alaska's past?"

► in' ū it

► Look at the diagram below. Do you think there are many trees in the north? Where would tree roots grow in the permafrost? Plants need soft ground and warm weather to grow. Is the Arctic a good place for farming?

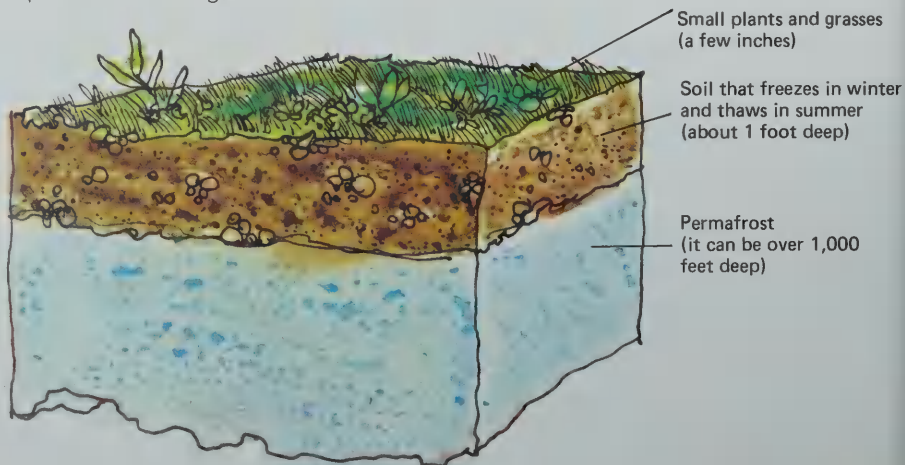
Eaters of raw meat The Eskimos were given their name by Indians who visited the Arctic. The name came from an old Indian word meaning "eaters of raw meat." But Eskimos have another name for themselves—*Inuit*, which means "the people."

In their cold environment, the Eskimos had to work hard to survive. They had to learn ways to adapt to their special environment.

In this unit you will be studying about one group of Eskimos who lived in North Alaska. But all the different groups of Eskimos lived in very much the same way.

Hunting for food The land in the Arctic is very different from the land where you live. In the Arctic, there is usually a top layer of 2 or 3 feet of frozen snow and ice mixed with some soil. Below this is the **permafrost**. Permafrost is a thick layer of frozen ice. It is sometimes as deep as 1,200 feet!

The Arctic summer is very short. Therefore, the permafrost never melts! Some scientists think the permafrost is left over from the Ice Age. At that time, ice covered much of the earth's surface.



Animals of the Arctic Although plants grow poorly in the Arctic, many animals live there. Some—like seals, walruses, and whales—live in the cold and often frozen waters of the Arctic Ocean. Other animals, like polar bears and caribou, live on the land.

Look at the chart below. It shows that Eskimos hunted different animals in different seasons. Often when the season changed, a whole Eskimo village moved to another place to hunt these animals.

Seasons	Animals Hunted
Winter	Seals, polar bears, foxes, fish
Spring	Whales, seals, ducks, birds, fish
Summer	Caribou, walruses, seals, ducks, fish
Fall	Seals, fish

Hunting seals The chart shows that the Eskimos of North Alaska hunted seals all year round. Seals were a very important source of food. The Eskimos also used seal skins to make clothing.

Hunting seals was a tricky job because Arctic waters were frozen most of the year. Seals are not fish. They must come out of water to breathe air. When the water is frozen over, seals make holes in the ice. They do this by chewing through the ice or by breaking it with their heads. The holes they make are called blowholes.

◆ A caribou (kar' ə bü) is a big reindeer with very large antlers.

◆ Which animals did the Eskimos hunt all year round? Which animals did they hunt the least? Which animals would you guess were best for food? Read on to see if you were right.

The class probably will not guess why the cabin is a symbol of Alaska's past. Explain that it is difficult to build tall buildings with deep, stable foundations in permafrost. Ask: "Do you think the bottom of the building would be warmer than the permafrost? Might it cause the permafrost around it to melt?" Tell the pupils that some modern builders have suggested refrigerating the bases of buildings as they are put into the permafrost. This would lessen the thawing and keep the building from sinking or moving into a lopsided position. Ask: "Can you think of any other ways taller buildings can be put up in the Arctic?"

Tell the pupils to read pages 185–186 and the first paragraph on page 187. Ask: "Why do you think that the best hunter was the most important man in the family or village?" Tell the class that the Eskimos did not believe the good hunter was merely a very skilled person. They thought he also had special powers. According to Eskimo belief, animals could become men if they really wanted to; they also could be reborn as men or as other animals. A mighty hunter was someone who was able to convince animals that they should allow themselves to be killed because they might come back as people.

Ask: "Would the villagers believe that a mighty hunter had some special power that made the animals want to be killed by him? Would they respect him more as a result?" Inform the class that four kinds of seals are used by the Eskimos: small hair seals, ringed seals, harbor seals, and the larger bearded seals. All eat fish, squid, octopuses, shellfish, and sea birds. Also, all parts of the seals are used by the Eskimos. Some seals have a thick layer of blubber, or fat, which helps hold in body heat. This blubber is important to the Eskimos as a source of oil. The skins of some seals are used by the Eskimos for clothes. Eskimos use some seals for their tender flesh and thick hides. The leather is used for making harpoon lines and harnesses for dog teams.

The gut of seals is tough and translucent; therefore, it is used for skylights in homes. It is also used for waterproofing clothes.

Tell the class that Eskimo boys began practicing to be hunters at a very early age. They became hunters as young as 12 years of age. After a successful first hunt, boys were congratulated and given special celebrations. However, the young hunter was not allowed to eat any of the animal he had killed if it was the first time he had killed that kind of animal. Eskimos believed that a hunter would never be able to kill that kind of animal again if he broke this special law, or *tabu*. Explain that any prohibition of this kind is called a *tabu*. Make sure the class understands what it is.



To find out if seals were around, an Eskimo hunter had to study the ice carefully. If he found a blowhole, the hunter sat nearby with his harpoon ready. He had to sit quietly. Sometimes he would sit for hours without moving. When a seal finally came up for air, the hunter stood up quickly. He plunged his harpoon straight through the ice and into the seal.

During the spring and summer, seals sometimes take naps on the ice. Even when they are napping, they open their eyes every minute or two. They are looking for their enemy, the polar bear.

To catch a napping seal, the Eskimo hunter would bend down on the ice. Then he would make believe that he was a seal. Seals do not have good eyesight. To seals, a man standing looks like a polar bear. This is because bears stand on their back legs when they attack. Now can you see why an Eskimo pretends that he is a seal?

Hunting whales Eskimos used a special boat for hunting called a *umiak*. Umiaks were very light but very strong. It took several men using oars to row the boat into deep water. When hunters spotted a whale, they threw their harpoons into the whale's thick skin.

Eskimo women The Eskimo women of North Alaska also had many jobs to do. They had to take care of the house and make sure that it was always warm. They made clothing from animal skins for the people in their family. They prepared the meat and fish that the men brought home.

◆ ū' mē ak'

One of the skills learned by young Eskimos was how to use a kayak. Explain that it held only one person. The kayak was made with a light frame and covered over with skin, except for a hole for the hunter. With his waterproof parka and skins pulled up tightly around the hole so that no water could get in, the kayaker could flip over in the water, as he often did to show off on his return from a successful seal hunt. Because the boat was waterproof, it could be flipped over without sinking.

Have the class read the rest of page 187. Ask: "Which kind of boat is shown in the picture on page 187?" Explain that the large umiak was built to hold up to 20 men. Its framework was built out of pieces of driftwood. Over this the Eskimos placed a cover of walrus hide, which the women had sewn together. Using ivory needles and sinew thread, Eskimo women sewed very tiny stitches. Once lashed to the framework of the umiak and dried, the skins shrank and the holes made by the needles closed, making the boat watertight. Walrus hide was used because it is a very strong skin. It does not soften quickly in water, and only after a few days of use did the Eskimos have to let the skins dry out.

The Eskimos knelt in the bottom of the boat to row, and a captain steered at the back. The umiak made it possible to travel long distances. Umiaks were sturdy enough to use for hunting walruses and whales. Ask: "Why do you need a strong boat to hunt whales?"

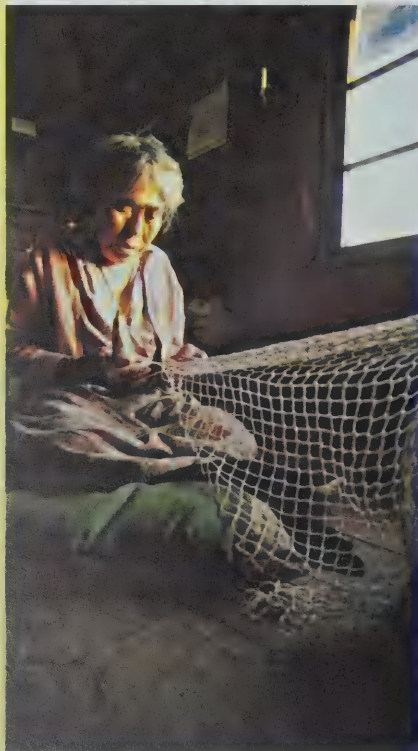


Tell the class that walrus live on ice floes and ice packs. Eskimos hunt the walrus not only for its tough skin but also for its meat, its thick layer of fat, and its tusks. Have the class look at the picture on the bottom of page 183. Ask: "What animal do you think the Eskimos are pulling ashore? What part of the animal is the Eskimo on the left holding?" Tell the pupils that the long, ivory tusks of the walrus are used by Eskimos for making tools, needles, and art objects. Each tusk averages from 14 to 20 inches in length. They might be as long as 40 inches. Ask: "What do you think the walrus uses his tusks for?" Tell the class that the walrus uses his tusks to dig for clams at the bottom of the ocean. Tusks also serve as weapons in fights.

Have the class look at the pictures on page 188 and read the first half of page 189. Tell the pupils that the Eskimo woman arose before the rest of the family to heat water for tea in a clay cooking pot over an oil lamp. This lamp was a soapstone tray filled with oil from fat or blubber. Moss wicks were floated in the tray. It took a long time to heat things over this lamp. Women spent as much as half a day cooking a chunk of seal meat over the oil lamp. The rest of the day was spent in chewing leather to make clothing and scraping the hair from the hides so that the hides could then be used in various ways.



There is little in the north the Eskimos can use. Yet Eskimo women must make many things for their families and homes. They even make toys and masks used in celebrations.



Making clothes was hard work for an Eskimo woman. Here is how she made clothes from a seal skin. First, she cut the skin of the seal away from the blubber. She used a special knife called an *ulu* to do this.

Next she cleaned the outside of the seal skin. Then she took it outdoors to dry in the cold air. When it was dry, she took it inside and chewed it to make it soft.

Now she was almost finished. She took the *ulu* again and cut the outer skins. Then she sewed the pieces together with a needle made of bone. She used thin animal muscles as thread.

Sewing the skins was very important. The Eskimo woman sewed the skins tightly. She did not want holes to let water or cold air in.

VILLAGE LIFE

Most Eskimos lived in small villages. Each village had about ten Eskimo families. But there were a few large villages with over 1,000 people in them.

Village life was important to the Eskimos. In the winter and spring, there is little light in the Arctic. Hunting was always difficult during these seasons. Therefore, Eskimos spent a great deal of their time indoors. Often they would visit each other in the village.

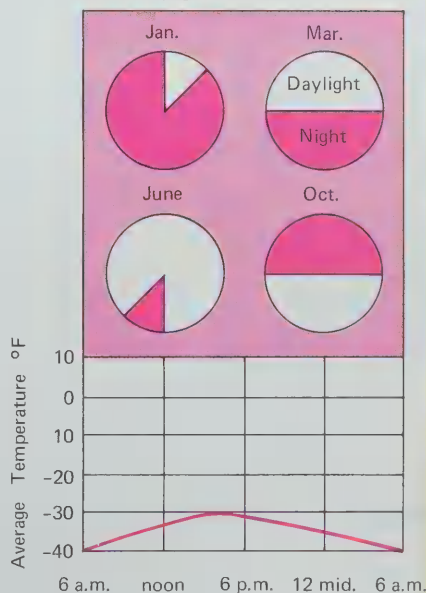
The Eskimos had a winter house for the cold season and a summer one for warm weather. But both houses were different from the ones you live in.

◆ Blubber is the fat of sea animals.

◆ ū' lū

◆ How did the Eskimo women use the resources around them to make life more comfortable?

Daylight in Arctic Lands



Activities

1. Have the pupils draw pictures of some of the things Eskimos make from the animals they hunt. If the pupils like, they can then make a bulletin-board display with their pictures.

2. Have the class find out what tools besides the *ulu* were indispensable to Eskimo women.

LESSON 3 (pp. 189-192)

Lesson Objectives: Understanding that communities often develop special characteristics in response to environmental factors. Knowing what Eskimo communities were like. Learning that groups help each other.

Lesson Skills: reading graphs and charts, interpreting pictures, evaluating

Introduction

Have pupils indicate what they would do if it did not become dark at night or light during the day. Ask: "Would you go to bed at the usual time? How would you like to go to school by flashlight because it was still dark? Would you like months of almost continuous daylight and months of almost continuous dark?"

Lesson Development

Have the class read the rest of page 189. Ask: "What would you do in the long evenings if you had no TV or radio?" Tell the pupils that most Eskimo villages had a large social hut. The men used it as a clubhouse in which to tell stories, to talk about hunts, and to have meals. Women were allowed to bring food and serve the men, but they did not remain.

Have pupils look at the diagram on page 189. Place an unshaded lamp with a dim bulb on a table and pull the shades so the room is fairly dark. Have a pupil carry a globe around the table at a distance. Be sure the globe is held with the top tilted continuously at approximately 23° to the east. Write the dates the four seasons begin. They are: September 22, December 21, March 22, and June 21. Ask: "How long does it take the earth to circle the globe?" As the pupil carries the globe around the room, tell the class to notice how the light shines on the Arctic at different times. Ask: "How much of the year is the Arctic in the shade? How long is it in the light?"

Tell the class to read pages 190-191. Write the word *igloo* on the chalkboard: Tell the pupils that *igloo* means "house." Eskimos once used it to refer to any house and not just the snow-block houses used in winter on hunting trips. Tell the class to look at the pic-

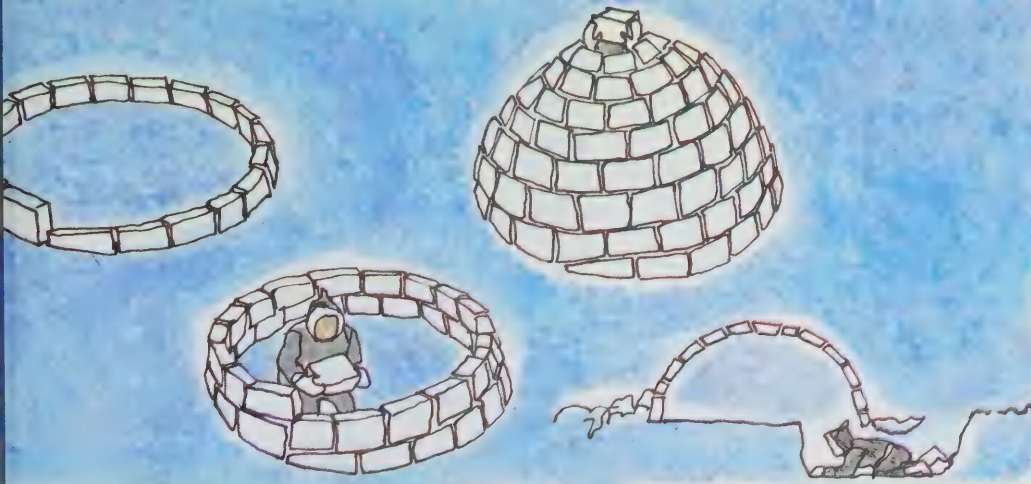
◆ Sod is a layer of ground covered with grass.

Winter homes Most Eskimos made their winter houses out of spare pieces of wood, stones, and sod. They bent through a long, low tunnel to enter the house. The tunnel helped to keep out the cold and was also used for storing things.

The house had only one big, round room. Half of the room was filled with a large platform about 3 feet high. This platform was covered with dry grass and fur skins. The Eskimos ate, sat, and slept on the platform. Can you guess why they did this?



The man on the left is making a statue. He is using an ax to cut a piece of soapstone. Eskimo people also carve ivory and wood. They are famous for their arts and crafts.



Summer homes When late spring and summer came, the Eskimos left their winter homes to hunt. At this time, they lived in tents made from the skins of animals.

Sometimes Eskimos built a snow house, or igloo, when they were traveling. An igloo only took an hour to build and it was always safe and warm.

Government Early Eskimos had no laws or police or kings. The people knew what they had to do and they all tried to do their best.

Some Eskimos did not always do the right things. For example, a man might be lazy or a woman might not share her family's food. Other Eskimos would not speak to those people as a punishment. If someone was very bad, he might be sent out of the village.

All Eskimos honored a good hunter. They would ask him to help with their problems. But people did not have to do what the great hunter said. If they disagreed, they could do what they wanted. Still, the greatest hunter in the village was always an important man.

► What resources did the Eskimos use to make their houses? What resources are used to make the houses in the place where you live?

► Why would this be such a terrible punishment?

tures of the snow-block house on page 191. Mention to your pupils that some snow houses were built with translucent gut over the hole in the top. The hole could be opened to allow smoke to escape. Also, visitors could announce themselves by calling through the skylight of the house.

Have the class list the many things the Eskimos made in order to live in their cold climate. Include: Eskimo lamps for light and cooking; bows and arrows; harpoons with sinew attached to retrieve the harpoon; floats of inflated bladders used to mark a kill; the umiak; the kayak; ice picks; bone and ivory nails, needles, and tools; goggles to prevent snow blindness; special water-proofed clothing for warmth; dogsleds for transportation; and special houses.

Ask: "Were any of these things not really needed to live in the hostile Arctic environment?" Help the pupils form the generalization that the Eskimos worked hard and used everything in their environment just to get the bare necessities of life.

Have the class read about celebrations, on page 192. Each winter, an annual gathering was held. Dancers told a story of some special event or a legend. Drums made of hide over driftwood, shaped like large tambourines, accompanied the dancers. Women danced behind the men in groups. Men held singing contests in which they could say anything they wanted about an enemy, with the group acting as judges. Ask: "Is this a better way to solve a quarrel than fighting?"

The Eskimos had a number of different games and sports. Women made finger masks of ivory to use as we use puppets. Summer games included wrestling, weight lifting, and ball games over a mile-long field. Explain that there are 5,280 feet in a mile. A football game today is played over a field approximately 300 feet long. Ask: "Would you like to run 5,280 feet in an Eskimo game?" Have pupils look at the picture of the game called "skin for tossing," on page 192. Ask: "What game does this remind you of? How many of you have jumped on a trampoline? Does this game remind you of a trampoline?"

Activities

1. Tell the pupils to try to make a snow house of sugar cubes. They may have to shape some of the cubes. Tell them to remember to plan for an underground entry.
2. Have each pupil carve an animal, such as a husky or a seal, from a bar of soft soap.

LESSON 4 (pp. 192-195)

Lesson Objectives: Knowing some of the ways that change comes about. Understanding that the excessive hunting of animals can result in their extinction and harm the businesses built around them.

Lesson Skills: analyzing, reading maps, "reading" pictures, contrasting, evaluating

The child in the picture is taking part in a popular Eskimo game. She is being tossed in the air on a large walrus skin called a "skin for tossing." The player climbs on the skin and is tossed into the air until he fails to land on his feet. Then someone else takes his place.



Celebrations In the spring, groups of men would go out to hunt whales and walrus. If they killed a whale, the people would have a great feast to celebrate. The families of the hunters prepared everything for the celebration. They invited all the people in the village.

CHANGE AMONG THE ESKIMOS

In the 1800s, two English explorers went to northern Alaska. They saw something that seemed very strange. Copper was not common in the Arctic, but some Eskimos had copper kettles. The two explorers wondered where the Eskimos had gotten the copper kettles.

Several years later, the mystery was solved. Eskimos traded just like other people. Eskimos near the Norton Sound went to trade with Eskimos from Siberia. Follow the map on page 193 carefully. You can see the Eskimos' trade routes and know where their goods came from.

When the Europeans and Americans explored North Alaska in the 1800s, they began to trade with the Eskimos. They traded guns, ammunition, knives, sugar, tea, and other things for whalebone and blubber. The traders especially wanted whalebone.

Trading whalebone Whalebone is not really the bones of a whale. It is something that grows on the inside of the whale's mouth. Whalebone is very much like your fingernails. In the 1800s whalebone was valuable. It was used to make things like buttons and fishing rods. The blubber of the whale was boiled down to an oil and used for fuel in lamps.

Because of this trading, whaling became more important than ever for the Eskimos of North Alaska. They would hunt whales and then trade their catch for goods.

Soon Eskimo men were hired by the owners of whaling ships to go on whale hunting trips.

► Look at the routes the Eskimos used to get from Norton Sound to Siberia, from Kotzebue to Nirlik. What means of transportation did the Eskimos have to use?



Introduction

Ask: "Why would trading be important to any group of people? What kinds of things might the Eskimos have for trading with other groups? Do you think they began to concentrate on whaling more when they found that whalebone was desired? Why would shipowners want to hire Eskimos for their whaleboats?"

Lesson Development

Have the class read pages 192–193. Tell pupils that the whale is not a fish. It is the largest known mammal. Although it lives in the ocean, it has lungs, not gills, and so must breathe air. The whale retains the air in its lungs for about 15–20 minutes, and then it must surface to breathe again. You might want to explain that there are two kinds of whales. Toothed whales include the dolphin, the killer whale, and the sperm whale. Baleen whales (including the blue whale and the humpback whale) have no teeth. Instead, they have horny plates, called baleen, in their mouths. It is baleen which was called whalebone and which was in great demand for stiffening collars, cuffs, hoop skirts, and so forth.

Instruct the class to read pages 194 and 195 up to "The Eskimo Family Today." Ask: "Do you think we are still interested in the products from whales?" Whaling is still a big business. Giant whaling factories actually located on ships are used. Today, most of the danger of whaling is gone. Chaser boats armed with harpoon-guns accompany a factory ship. Their harpoons have bombs at the tip, which can kill a whale instantly. International agreements now govern whaling so that species will not die out. Most countries obey the laws. They agree that cows cannot be taken while nursing young; young whales cannot be caught until grown; and that some species of whales cannot be hunted.

Today, whale oil is used principally for margarine. It is also used for soap, in cosmetics and ointments, and as motor oil. Whale meat is eaten by animals and a few people; whalebone meal is used for chickens and cattle; and ambergris, found in the intestines of some whales, is used in perfumes.

► What advantages does using money to buy things have over trading for them?

► How did whaling change the Eskimo way of life? How did new technology change the whaling business? Would you call these changes good or bad? Why?

Once the Eskimo woman made all of the clothing the Eskimos wore. She even made their boots. Today the Eskimos buy the things they need in stores. What do you think the Eskimo woman in the picture is buying?

They used their salaries to buy goods at trading stores. For the first time, they were buying things instead of trading for them.

The end of the whaling trade Whaling was an important industry until the early 1900s. Then things changed. By 1915, the whaling business had died.

Several things caused the death of the whaling industry. Instead of rowboats, whalers used new ships with steam engines. These ships could travel fast and far. They could follow the whales wherever they swam. This meant that the hunters could catch more whales. Soon, there were few whales left.

When the whaling business ended, the Eskimos of North Alaska had a big problem. They no longer had things to trade or sell for the goods they wanted.



FINDING SOLUTIONS

The United States government had one solution to the problem. In 1892, the government moved some reindeer from Siberia to Alaska. The number of reindeer grew quickly in Alaska. They were used to the cold Arctic climate.

By 1932, there were 600,000 reindeer in North Alaska. The Eskimos herded reindeer like American cowboys herded cattle.

Fox trapping In the 1920s, a new business opened up for the Eskimos. People in Europe and the United States wanted fox skins to make fur coats. So the Eskimos started trapping foxes. They got a good price for the fox skins.

But even fox trapping did not last very long. In 1929, people ran out of money to buy fur coats. Times were bad. Luckily for the Eskimos, there were plenty of other animals in the Arctic. Many Eskimos again began to hunt for their food. But the Eskimos could not go back to their old way of life. They had grown used to their new ways of life. Today, the Eskimos of North Alaska are still a changing people.

THE ESKIMO FAMILY TODAY

Years ago the Eskimo man's most important role was that of hunter. Today some Eskimo men are still full-time hunters. But hunting is becoming less and less important to the Eskimos of North Alaska. Some just hunt part-time. Others no longer hunt at all.

Ask: "Why is it important to be able to buy the soles for boots? How important would boots be for an Eskimo?" Originally, the Eskimo women used leather to make boots. Today, Eskimo women may buy the soles and sew the tops on, or even buy the boots. Tell the class to look at the picture on page 194. Ask: "Is the woman buying soles for making boots? If you were a mighty hunter, would you be happy to change to another occupation? Would you be happy to be a herder of reindeer?" Tell the class that it took about 50 years for the Eskimos to accept reindeer herding. Ask: "Do you think change is necessary? What might have happened to the Eskimos if they had not changed? if they do not continue to change?"

Activities

1. Have pupils role-play a whaling trip.
2. Tell the class to prepare and hold a debate on whether our government should stop people from using real fur.

LESSON 5 (pp. 195-197)

Lesson Objectives: Recognizing that although the life of the Eskimos has changed drastically, they have managed to keep some of their old ways and have blended them in with their new life-styles.

Lesson Skills: comparing and contrasting, interpreting pictures, analyzing

Introduction

Ask: "What big changes do you expect to see in Eskimo life today?" Explain that now ships bring in goods needed for homes and stores. Small planes equipped with skis and water floats instead of wheels land in outlying areas. Submarines explore Arctic waters. Ice cutters break up ice floes to provide passage for the ships. But along with the modern transportation, you can still see sleds drawn by caribou, reindeer, or dogs.

Lesson Development

Tell the class to read the rest of page 195 and page 196. Have the pupils look at the pictures of modern Eskimo life, on page 196. Ask: "What changes in Eskimo life do the pictures show? Is the wooden house like many modern homes we see around us?"

Ask: "What kinds of things do you do at school?" Have the pupils list subjects they study and the special activities they do in the classroom. Have the class compare these with the activities of Eskimo children today.

Have the class read page 197. Ask: "Why didn't Eskimo villages need leaders in the past? Why do they need leaders today? Do you think Eskimo villages will change as more men leave hunting to work at the airfields and radio stations and on construction projects? Do you think the Eskimos would accept a woman on the village council?"

► Perhaps your grandfather was a farmer. If so, would you know how to be a farmer too? Do you have to learn the same jobs your parents learned?



Eskimo men of today drive tractors to make new roads. Men and women buy many of the things they need. They even buy the ice they use for drinking water.



New jobs Now many Eskimos work for government agencies in the Arctic. Some work at military bases and weather stations. Many men work at jobs during part of the year and hunt at other times. During the summer, some men go to southern Alaska and take jobs as construction workers or miners.

Changes are taking place for Eskimo women, too. Without many animal skins, Eskimo women cannot make clothing. So they must buy their family's clothing—usually from the same place where they buy food.

Eskimo children today Life has changed for the Eskimo children, too. Like you, all children must go to school. At school, they do not learn to hunt and fish and make clothing. They study math, reading, science, and all the other subjects that you study. After school, children do play the old Eskimo games. But they also listen to music and go to the movies.

Leaders and councils In early days Eskimos honored their best hunters. But they had no real leaders. When the traders came, however, the Eskimos needed leaders. They needed people who could deal with the traders and government officials.

Today, Eskimo villages have councils to help solve village problems. They also plan a village's future. Some problems may be about where to build a new hospital or how the town should dump its garbage.

Government aid The government wants the Eskimos to become more modern. It tries to help the Eskimos in many ways. It gives them medicine when they are sick. It loans some Eskimos money to start new businesses.

Many Eskimo leaders agree with what the government is doing. They want to help their people to live in the modern world. But they also want to keep alive the traditions of their ancestors.

1. Where do the Eskimos live?
2. What does the word *Eskimo* mean? What name do the Eskimos call themselves?
3. What animals live in the Arctic? Which of these animals do the Eskimos hunt all year round?
4. Do all Eskimos live in the same kind of houses?
5. How did the coming of American and European traders help bring change to the Eskimos?
6. Who makes important decisions in Eskimo villages today?

Activity

Have the class list some of the problems that Eskimos might face in their changing society. Set up a "Village Council" and have the class bring problems to it. Include such problems as law and order, finding outlets for village artwork, and setting up a new school.

Answers (p. 197)

1. Most Eskimos live in small villages in the Arctic in Greenland, Canada, Alaska, and Siberia.
2. The word *Eskimo* means "eaters of raw meat." The Eskimos call themselves *Innu*, which means "the people."
3. In the Arctic are polar bears, foxes, whales, ducks, caribou, walruses, seals, wolves, a variety of birds, and fish. Seals are the most important animals to the Eskimo and are available all year long.
4. Eskimos live in different homes in different seasons. Winter homes are made of wood, stone, or sod; summer homes are tents of animal skin or canvas; and snow houses are used when Eskimos hunt.
5. Traders from Europe and America wanted the valuable whalebone found in the mouths of whales. Whaling ship owners hired the Eskimo men to help them in their whale hunts. The salaries the Eskimos received allowed them to buy goods at the trading stores instead of trading for them. Eventually some Eskimos started their own businesses.
6. Village councils make the decisions in Eskimo villages today.

LESSON 6 (pp. 198–201)

Lesson Objectives: Learning that the Ashanti are a people of Ghana, a country in West Africa. Knowing that the Ashanti live in a tropical rain forest.

Lesson Skills: reading maps, “reading” pictures, comparing and contrasting, observing

Introduction

Ask: “What do you think about when you hear someone speak of Africa? Do you think about the animals that we see in a zoo today? Do you see warriors doing strange dances? Do you think about turbaned drivers in camel caravans crossing the desert?” There are many Africas. In the part called West Africa, many ancient and powerful kingdoms developed one after the other. Pupils are going to read about one of them—Ashanti.

The Ashanti: A Jungle People



Deep in the jungle of West Africa, there was once a powerful kingdom. Its people were proud and warlike. The people and their kingdom were called Ashanti.

Today, Ashanti is part of Ghana, a modern state in Africa. Find the western half of Africa on the map on this page. Now find Ghana. Can you find the part of Ghana called Ashanti? Ashanti is as large as New York State. About a million people live there.

LIFE IN ASHANTI

What is the weather like in Ashanti? It is never cold, and sometimes it gets very hot—as hot as 100 degrees. What kind of clothes do you think the Ashanti wear in the jungle? What would you wear in the jungle? What would you wear in the Arctic?

► Look at where Accra and Kumasi are located on the map below. Why is Accra better located than Kumasi for trading with other countries of the world?



Lesson Development

Have the class look at the man in the picture on page 198. Ask: "How can you tell that this picture was taken recently? Is the man in the picture doing any of the things you imagined Africans doing? Is Africa becoming modernized? Did change come to Africa in the same way it came to Alaska?" Have the class look at a world map or a globe and find the seven continents: Asia, Africa, Antarctica, Australia, Europe, North America, and South America. Ask: "Who can locate the equator? What continents does it cross? Do lands near the equator have hot climates?" Have the class find Africa, the second-largest continent, and then Ghana in West Africa. Ask: "Is Ghana near the equator?" Instruct the class to read page 199. Ask: "Would you like to live in a place where it is very hot most of the time?" Tell the class to imagine that they are very famous engineers. A big company wants to hire them to work in the jungle, and it has promised to build the kind of house they want. Ask: "What kind of house would you ask the company to build? What must the house have in it? Would you want a garden? What would you want in the garden? Suppose the company could not put in electricity, telephones, or air conditioning right away. Would you live there anyway?"

Instruct the class to read page 200. Next, have the pupils look at a land map of Africa and find out what kind of land Ghana has. Tell them to find the hilly land to the west of the Volta River. This hilly region is covered with tropical rain forest and is where the Ashanti live.

Ask: "Do the trees in the picture on page 200 look close together? Do you think these roots would be good in swampy countries? Would they help hold the soil?" Tell the pupils that the extract from the bark of the mangrove tree is used in tanning hides and in making dyes. Ask: "Do you think people can travel quickly through rain forests without roads?" Explain that often many different tribes, some of them unfriendly to each other, live in the rain forest. Ask: "Would these people have wanted roads leading to their villages? Why are drums a good way of communicating in the rain forest?"

Ask: "What kind of houses do the Ashanti live in? Are these houses anything like the house you, the imaginary engineer, wanted? Did the Ashanti learn to use the resources at hand to make their lives more comfortable? Do you think there are many people in Ghana today who also want to live in more modern and convenient houses than the ones described on this page?" Inform the pupils that the Ashanti way of life has changed many times. Tell the pupils to read the first part of page 201.

◆ A fern is a flowerless plant that grows in moist, shady places.

◆ Undergrowth (un' dər grōth) is the small plants that grow in a forest.

The mangrove tree thrives in hot climates. It grows in swamps, and it has long woody roots that keep the trunk above water.

The jungle Here is how an English doctor described the Ashanti jungle in 1889:

The ground is covered by a thick growth of plants. Ferns spread all along the roadside. The trees, which grow closer and closer together, are chained together by creeping plants.

Hundreds of butterflies flit across the road. Wasps and beetles hum through the air. Bright-colored dragonflies dart along the path in jerky flight; snails crawl in the damp, bushy undergrowth. The surface of every pond and stream is thick with flying beetles.

Some trees in the jungle grow 200 feet tall and are 20 feet around. Other trees are only 20 feet tall. In some places, the land is very muddy and there are lots of swamps. Because there is so much rain and so many trees, scientists call this a **rain forest**.

Almost every afternoon in spring, summer, and fall, rain pours down on the Ashanti lands. The Ashanti build houses of low clay walls and steep thatched roofs. They build the roofs with palm branches and cover them with big leaves. Why do you think the roofs are steep?



Farming The Ashanti did not always live in the jungle. Once they lived in the fertile grasslands to the north. Since the Ashanti were farmers in the grasslands, they remained farmers in the jungle.

The soil in the jungle was not good, however. An Ashanti man would cut down an area of jungle to make a garden for growing yams and plantains. But the hot sun would slowly dry up the soil and the rain would wash it away. After a few years the Ashanti man would have to clear more jungle for another garden.

THE GROWTH OF THE ASHANTI

Slavery The Ashanti were a weak tribe. Stronger tribes would often attack the Ashanti and drive them from their lands. That is how the Ashanti were forced into the jungle.

But even in the jungle, the Ashanti could not find peace. A strong neighboring tribe fought with the Ashanti and took many of them back to their lands as slaves.

It seemed that the Ashanti would be poor forever. But then, new people came to the coast of Africa and changed the Ashanti's lives.

The coming of the Europeans The people who came were European traders. They were looking for gold and slaves to send back to Europe and America. They landed on the coast about 125 miles from Kumasi, a large Ashanti town. Find Kumasi on the map on page 199.

The British merchants on the coast of Africa made a deal with the Ashanti. They began to

◆ Fertile (fer' til) means good for growing food.

◆ A yam is like a sweet potato. It grows well in hot jungles. A plantain (plant' ən) is a green, bananalike fruit.

◆ kũ mäs' ē

◆ A merchant is a person who buys and sells things.

Activities

1. Have the class set up a weather station to record the amount of rain that falls during a month or two. Compare this amount with the rainfall of Ashanti, which is about 50–60 inches of rain annually, or 5 inches a month.
2. Have the pupils draw a picture illustrating the Ashanti jungle described on page 200.

LESSON 7 (pp. 201–205)

Lesson Objectives: Understanding that the Ashanti grew rich from the gold and slave trades. Understanding how the Ashanti lived and how they governed their kingdom.

Lesson Skills: analyzing, comparing and contrasting, recalling, evaluating

Introduction

Ask: "Would people who live in grasslands build the same kinds of houses as people in the rain forest? Would they see the same kinds of animals? Would it take time to learn to live in a new land? How do you think people who were poor and who had to learn to live in a new land among hostile people became rich? Do you think they found they had valuable resources? Do you think something important happened that brought change to their part of the world? How does change come about?"

Lesson Development

Tell the class to read the rest of page 201 and the first half of page 202. Tell the class that Prince Henry the Navigator, of Portugal, was one of the best-known of the European explorers who visited the west coast of Africa. Have the class make a time line for the Ashanti. Tell them to use the time line on page 178 as a start. Have them add 1475—the date of one of the earliest settlements the Portuguese built on the coast of Ashanti in order to trade silk, woolen, and linen clothes and other goods in exchange for gold.

Instruct the class to read the rest of page 202 and page 203. Ask: "What did guns mean to the Ashanti? Did other tribes besides the Ashanti take captives as slaves? Do you think slavery was an old practice in Africa?" Have the pupils explain in their own words how Ashanti became powerful.

Tell the children that in 1817, an Englishman, T. E. Bowdich, visited the capital of Ashanti. He was impressed by what he saw—the organization of the Ashanti kingdom, the splendor of the king's palace, the great wealth displayed in Kumasi, and the beautiful arts and crafts. He saw colorful cloth woven on frame looms. Beautifully ornamented pottery was decorated with carved and incised geometric designs, feathers, and shells. Heads and even full figures were reproduced in bronze from wax and clay models. Gold and copper were used ornamentally. Weapons and tools were made of metal. Ask: "Why do you think the Ashanti built roads leading from Kumasi?"

► ō sē tū' tū



The Ashanti used figures like these for weighing gold. The weights were put on one side of the scale. The gold was placed on the other side. The design of the weight stood for an Ashanti saying. This one means: "A bird's family is the one he sits with."

send them guns in exchange for slaves and gold. An Ashanti leader used these guns to defeat neighboring tribes. The Ashanti leader's name was Osei Tutu. He became the first Ashanti king.

Osei Tutu enslaved many neighboring people and sent them to the British for more guns. He used these guns to capture still more slaves to send to the British. The British sent the slaves to America.

The Europeans made a lot of money from this slave trade. They also found a lot of gold in the area. For these reasons, this part of Africa was called the Gold Coast.

THE ASHANTI KINGDOM

The Ashanti also grew rich and powerful from this trade. Their leader, Osei Tutu, joined all the Ashanti people into a great kingdom. He did this by conquering all the towns and villages for miles around.

The Ashanti capital As the kingdom grew larger, there had to be ways of holding it together. Eight roads went from Kumasi, the capital, to the nation's frontiers.

Kumasi was a large and beautiful city. A visitor to the city said that the people wore gold jewelry and held grand festivals. The king's palace had more than 100 rooms.

Choosing a leader The king made no decisions alone. He always shared decisions with the chiefs of the separate states. At home, each



state chief ruled with the help of district chiefs. These chiefs ruled with the help of village chiefs. The village chief ruled with the help of family heads.

The king and the most important chiefs had to be from royal families. But within the royal family, anyone could be picked as king.

Symbols of power Every Ashanti leader was given a stool. The kind of stool he got showed how important he was. Here is how this custom began.

At a celebration, the chief priest once presented Osei Tutu with a very special stool—a golden stool. He said that the stool came down from the Sky God. He said that it contained the souls of all the Ashanti people. It was so holy that no one could lean his elbow on it. It was a symbol of the king's power.

Every family head and every chief also owned a stool as a symbol of power. When he traveled away from his house and garden, his son followed behind him with the stool.

◆ Did many people help choose a chief? Do you think people are happier when they choose their leaders? Why?

◆ A symbol (sim'bl) is something that stands for something else.

◆ Do you know any other symbols kings use?

Tell the class that Osei Tutu was able to conquer neighboring tribes not only because he had guns, but also because he had been able to organize his followers into a strong army of professional soldiers.

Ask: "Would you like to sit on a gold stool? Do you think it would be a pure gold stool? How much do you think a pure gold stool would be worth? Do you think it was painted, or perhaps set with diamonds, rubies, and other precious stones?"

The stool actually exists, although it is not of gold. It is made of wood overlaid with gems and decorated with gold. The stool was a symbol of the "seat of authority." Ask: "What does the phrase 'seat of authority' mean? How do you think this phrase came into being? Did it once mean a real 'seat?' Might it have meant a king's seat—a throne? Do any of our leaders today have symbols of power?" (our President's Seal of Office) Have the pupils look at the picture on page 203. Ask: "What symbols of authority are shown in the picture? Is attention being drawn to the king in other ways? What musical instruments are shown in the picture?"

Tell the class to read page 204 and the first paragraph of page 205. Have them look at the picture on page 204. Ask: "Why does the mother carry her basket on her head?" Have members of the class try to balance objects on their heads. Ask: "Is this an easy way to carry things? Can you carry heavy loads in this way? Do you think the little girl in the picture is proud to carry a basket on her head like her mother? Why is the baby held on its mother's back by a bandanna? Do you think the family are coming home from the fields? Do you think they are going to a market?"

Mention that market days were exciting and important times for meeting friends; selling goods grown and made in villages and homes; and buying foods, bowls, and woven cloth. Market days in Ashanti came at regular periods of time, usually five to seven days apart.

Ask: "How is the Ashanti family different from yours? Who would be your relatives if you were an Ashanti?"

Activities

1. Have the pupils write about an imaginary visit to Kumasi. Tell the children to describe what they saw and how they felt about seeing it.
2. Tell the pupils to write a paragraph on "How Osei Tutu Became the First Ashanti King."

Chiefs had umbrellas as symbols of power, too. Some umbrellas were made of beautiful cloth and were decorated with gold and jewels.

If a leader acted against the wishes of his people, they took away his stool and umbrella. Then he was no longer their leader.

Family The Ashanti family is probably bigger than yours. You live with your brothers, sisters, and parents. But if you were an Ashanti, you would only live with your mother's side of the family. Only they would be your relatives. You would not be related to people on your father's side of the family.

In Ashanti, many members of the same family live together. Is it good to have so many relatives? Do old people like it?

An Ashanti father might not live with his children because he might have other wives.



But his children would see him often. If you were a boy, you would carry your father's stool on your head. When you were older, though, you would spend most of your time with your uncle—your mother's brother. He would be like a father to you. If you were a girl, you would be taught by your mother and her sisters.

THE END OF THE ASHANTI KINGDOM

Early in the 1800s, 150 years after they came to the Gold Coast, Europeans stopped buying slaves. The Ashanti rulers decided to trade with other African tribes instead of the British.

The British attacked Ashanti eight times. But each time the British suffered from jungle sicknesses. And the Ashanti always fought them bravely. The British finally captured Kumasi in 1896.

The British exiled the king and took over the government. The British were successful in battle, but the Ashanti never really gave up. They still say, "The British did not get the Golden Stool. They never beat us."

In 1957, the British gave up Ashanti. It is now part of a new nation, Ghana.

ASHANTI TODAY

The central government of Ghana is more powerful than the Ashanti king. The central government has its capital in Accra. Find Accra on the map on page 199.

► Do you think the British would have won more easily if the Ashanti lived on the coast? Why?

► Why did the British want the Golden Stool?

◆ ə krä'

LESSON 8 (pp. 205–207)

Lesson Objectives: Recognizing that the capture of Ashanti by Britain brought an end to the Ashanti way of life. Knowing that the modern state of Ghana incorporates both new and old ways.

Lesson Skills: interpreting, analyzing, generalizing, evaluating

Introduction

Tell the pupils to suppose the United States had been conquered by another people. Ask: "Would this cause changes in the United States? Would the United States be able to keep its own leaders? Would people want to get rid of the conquerors? Would you keep alive the idea of freedom? Would you tell your children to work toward freedom?"

Lesson Development

Ask: "Why does a victorious army seek to exile the defeated king or ruler? If a very strong leader, such as Napoleon, were allowed to remain in the country, would he continue to try to overthrow the government?"

Inform the class the new state of Ghana includes more area than Ashanti. The Gold Coast colony, the northern region, and Ashanti were joined together to form Ghana. The leaders of the new country told its people they must work hard to build up its trade, commerce, and industry. Today, Ghana exports such products as gold, diamonds, manganese, bauxite (used to make aluminum), timber, and agricultural products (especially cocoa). Ask: "Is Ghana earning its wealth today in new ways? Is it also making use of the resources the Ashanti used long ago?"

Have the pupils read the feature on page 206. Ask: "Why did Mr. Moxon decide to stay in Ghana? Has he lived in the country for a long time? How did you get your name? Does anyone in the class have names given in memory of special people or saints? Why do some people give their children saints' names?"

Inform the class that Ghana became independent on March 6, 1957. Have the class read page 207 and indicate the changes that have occurred in Ghana today. Ask: "Does the picture on this page indicate that people of Ghana have changed their ways of living from the ways of the past?" Help the class generalize that change is constant and usually is experienced by all groups and communities continuously.

MR. MOXON—THE ASHANTI CHIEF

Does the Ashanti way of life seem strange to you? Can you see yourself believing in spirits, or wishing to grow up owning a fancy stool and a big umbrella? Would you want to live in a jungle village under a hot, hot sun?

When Mrs. Richard Nixon visited Ghana in 1972, some Ashanti chiefs invited her to a party. When she arrived, one of the chiefs leaned forward on his stool. He tilted back his giant, velvet umbrella. Then he welcomed the President's wife. He spoke in perfect English. The man's skin was pink-colored, and he weighed 280 pounds. His name used to be R. James Moxon. But now he is called Chief Nana Kofi, "the man born on Friday, the god of the cotton tree."

Mr. Moxon, who was born in England, lives the life of an Ashanti. He went to Ghana in 1941, when the British ran the country. When Ghana became a nation in 1957, Mr. Moxon waved goodbye to his British friends. He decided to stay. He liked African life, and the people where he lived

liked him. They asked him to become one of their chiefs!

Mr. Moxon traded his jungle helmet for an umbrella and a stool. He was now Chief Nana Kofi. Why did he stay? "... the true human ideas are still here (in Africa)," he says. "That is why Africa is so refreshing to live in."

In our part of the world, we continue with our busy lives. But leaning back under some jungle tree, Nana Kofi sits and talks with his African friends.

Do you think the Ashanti way of life is much different from yours? Is one way of life better than another?





Some houses have tin roofs now. Many of the children no longer carry their fathers' stools. Instead, they go to school and learn to read and write.

Girls play with British dolls, and boys play European sports like soccer. Some children have even seen American movies and play cowboys and Indians.

Village councils are still important. They meet every day. They prepare for ceremonies; they make sacrifices to the gods; they make sure the roads are clear; they settle arguments among the people.

Do you think the Ashanti way of life has changed since the times of Osei Tutu?

How is this shopping center in Ghana different from the old Ashanti villages? What new kinds of things can be bought in the center?

► Who does these jobs in the United States?

1. In what modern African nation are the Ashanti people located?
2. Why did European merchants call the area around Ashanti the Gold Coast?
3. Who was Osei Tutu? How did he make Ashanti a rich and powerful kingdom?
4. How did the Ashanti choose their rulers?
5. What important symbols of power did the Ashanti chiefs have?
6. What is the capital of Ghana? What part of the country is it in?
7. When did Ghana take control of its government from Britain?

Activities

1. Have the class plan a "market day." Have them prepare tiny clay imitations of vegetables, fruits, pottery, and basketry for sale.
2. Have the class hold an Ashanti village council. Tell the pupils to think up and discuss an important change in, or need of, their village. Have them decide what to do about the problem.

Answers (p. 207)

1. The Ashanti people today live in the modern state of Ghana.
2. Many minerals of value were found in Ashanti. But gold was abundant and it was desired by the Europeans. Consequently, the area around Ashanti was called the Gold Coast.
3. Osei Tutu was the most important and powerful leader of the Ashanti. He united all the Ashanti into a great kingdom by conquering all the towns and villages around his capital.
4. The Ashanti king had to be of royal blood. But anybody from within the royal family could become king.
5. The stool and the umbrella were symbols of power. The king sat on his "golden stool," which symbolized his "seat of power or authority."
6. Accra is the capital of present-day Ghana. Unlike Kumasi, Accra is located on the coast.
7. Ghana became independent of Britain on March 6, 1957.

INVESTIGATING THE UNIT

Gathering Information

Between 40 and 50 years ago, scientists found remains of villages on islands in the Bering Sea. They called the people who lived there the Old Bering Sea People. Scientists think these people were the ancestors of the Eskimos.

Go to the library and find how the villages were discovered. How old are they? Did archaeologists find other villages like them nearby?

Grouping Information

Cut out pictures from newspapers and magazines that show people buying things. Put the pictures of things that Eskimos would not buy in one pile. Put pictures of things the Ashanti would not buy in another. Are there pictures showing things that neither people would buy?

What Does the Map Tell You?

Look in an atlas and find a map that shows the land of Ghana. Copy the map and shade in the rain forest area. Shade the grasslands in a different color. Now mark Kumasi on the map.

Look at your map. Were the Ashanti driven far from their first homeland when they were forced into the rain forest? List three ways you think the lives of the Ashanti were changed by this move.

Using What You Have Learned

Imagine you are writing a play about the owner of a trading company 100 years ago. Write a speech in which the owner orders two traders to go trade with the Alaskan Eskimos and with the Ashanti. Have him tell them what goods they should try to get, what they should give in return, and also, what things they should take with them to survive.

Comparing and Contrasting

In the next scene of the play, the returned traders tell the company owner about their trips. One describes Kumasi. The other tells about the Eskimo village he visited. They discuss why one people needed a strong king, while the other lived without any strong leaders. What reasons do you think they gave to explain this?

UNIT 7

READING LESSON: WORK-STUDY READING— SCANNING FOR INFORMATION

Purpose

Pupils must learn to scan a chapter for important information as they continue reading for social studies. Sometimes this information requires a description of *how* or *why* something is done.

Introduction

Say: "In our last unit, we worked on a study guide that required only single words or phrases. But sometimes we are asked to find out why something is done, or how it is done. Then we have to do two kinds of reading: scanning and thorough re-reading."

Development

Have pupils turn to pages 218–219. Ask them to scan these two pages until they locate a group of sentences (a paragraph or part of a paragraph) that answers this question:

1. How is farming done in the East?

Pupils should find the following sentences:

"In the east, farming is hard work. There, as in the west, farmers have to clear the land. Then they plant their crops in the same plot for a few years. Yams, cassava, and corn are

the main crops. When the food in the soil is used up, the farmers move on to an unused area nearby. The old land becomes wild again. It is on this wild land that the oil palms grow. Do you think the oil palm is hard to care for?"

Pupils should identify the underlined sentences as the specific ones that tell *how farming is done* (not what is grown) in the East. These sentences should be copied exactly, or written down in pupils' own words.

Review the procedure:

1. Survey the question. Decide on clue words to look for.
2. Locate the sentences that give the answer.
3. Check the question again. Locate the sentences that give the exact answer. Omit other sentences.
4. Copy the answer.

Application

Have pupils complete the following study guide for pages 221–223.

1. Why did the British want palm oil?
2. How did the Nigerians obtain palm oil? Describe.
3. In what way did the British come to control Nigeria?
4. What did the Nigerians learn from the British?

Have pupils complete the study guide. Discuss the results with them.

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READING LESSON PLANS

NIGERIA: BECOMING INDUSTRIALIZED

In those days, there were many wild animals, and every place was covered by thick bushes and forests; . . . towns and villages were not near each other as nowadays. . . .

AMOS TUTUOLA

Knowledge Objectives

Understanding that Nigeria, in West Africa, is a new nation.

Knowing that Nigeria has many different kinds of people, land, and resources.

Understanding that the British came to Nigeria and developed industries based on the natural resources of Nigeria.

Understanding that the British taught the Nigerians a new way of life.

Knowing that industrialization has brought both benefits and problems to Nigeria.

Recognizing the difficulty of getting people of different cultures to work together.

Value Objectives

Appreciating the way people combine their traditional ways with new ones.

Respecting the fact that different peoples have different values.

Appreciating the way people face challenges.

Skills

Analyzing information about the land of Nigeria.

Comparing Nigerians' new ways with their old ones.

Drawing inferences about the effects of industrialization on people's ways of life.

Observing the ways in which change comes to a country.

Reading charts for information about occupations, the value of exports, and transportation routes.

Reading maps which show Nigeria's land, ancient kingdoms, and resources.



LESSON 1 (pp. 210–215)

Lesson Objectives: Understanding that Nigeria, in West Africa, is a new nation. Knowing that Nigeria has many different kinds of land and people.

Lesson Skills: reading maps, analyzing information, “reading” pictures, hypothesizing, inferring

Introduction

Try to elicit the idea of what a nation is from the pupils. Ask: “What do you think of when you think of your country—or nation?” Have the pupils draw what they think of when their country is mentioned. Ask: “Did everyone in the class draw the same thing? Do you think schoolchildren throughout the United States would draw the same thing as you did? Why? When was your country founded? Do you think the government in Washington, D.C., represents all of the people in the country? Do you think people throughout the United States have many things in common? What are some of the things they have in common? Can people throughout the United States speak to and understand each other? Do you feel proud of your country? Why do you feel proud of your country? How would you define a country or nation?” (a large group of people with a common language, territory, history, and culture)

Lesson Development

Have the class read page 211. Ask: “What does ‘Nigeria is a new nation’ mean?” Tell the pupils that Great Britain controlled what is now Nigeria for 60 years—from 1900 to 1960. Before that, hundreds of different peoples, or tribes, lived in Nigeria, ruling themselves and following their own ways.

Land and Wealth

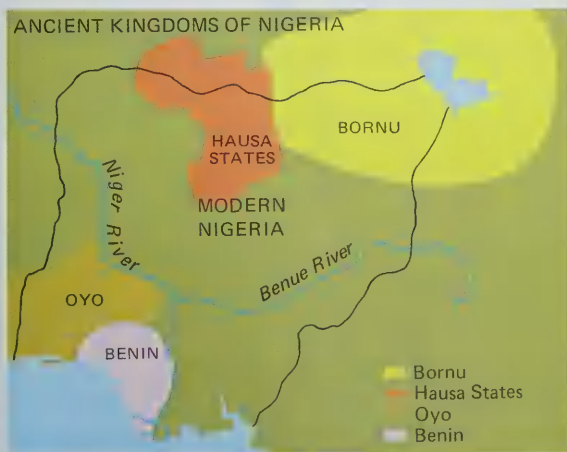


On the west coast of Africa, there is a country called Nigeria. Nigeria is often called a “great giant that is waking up.” That is because Nigeria is rich—rich in petroleum, palm oil, tin, iron, and peanuts. And it is beginning to learn how to use this wealth.

Wealth is not new to Nigeria. Hundreds of years ago, there were powerful kingdoms in what is now Nigeria. These kingdoms were known throughout much of Africa. What is new in Nigeria is the way in which people earn their livings. Nigeria today is modern and industrial: Machines, factories, and tall buildings stand in its largest cities.

Look at the picture on page 213. How is it different from the picture on page 210?

A new nation Nigeria is a new nation. On October 1, 1960, Nigeria won its independence from Great Britain. Nigeria could now rule itself.



► nī jir' ē ə

► Petroleum (pətrō' lē əm) is an oily, dark-colored liquid. Gasoline is one of the things made from it.

► How many kingdoms on the map below were completely within Nigeria? Which ones stretched beyond it?

They spoke their own languages and felt loyalty only to their own tribes.

Inform the pupils that at certain times, some of the people of Nigeria were able to form powerful kingdoms. The most important of them are shown on the map on page 211. Ask: “What are the names of some of these kingdoms? Where was Benin (be nin') located? Oyo (ō' yō)? the Hausa (hou'sə) states? Bornu (bōr' nū)?” Give the class the following dates, which tell when the kingdoms began to grow strong and how long they stayed powerful.

Bornu: from about 1350 to 1800.

Hausa States: from about 1350 to 1900.

Oyo: from about 1250 to 1820.

Benin: from about 1350 to 1820.

Ask: “Did any of these kingdoms last a long time? How long? How old is the United States?” Next, have the pupils look at the map on page 215 and figure out what kind of land each of the kingdoms had. Ask: “Do you think the people in the different kingdoms earned their living in the same way?”

Ask: “Do you think the people of these tribes felt that only their own kingdom was their ‘country’? Tell the class that the Nigeria of today is made up of all the land that Britain was able to take control of in that area. Britain gave it one government and tried to make the people feel they had something in common. The good of each people was tied to that of the rest of the country. When the British left in 1960, they felt they had succeeded to a large degree.

Ask: "Do you think people who have followed their own very different ways for centuries can forget their independence and learn to cooperate with others in 60 years? Do you think they will have to learn to work together in order for their country to become strong?"

Tell the class to read page 212 and page 213 up to the section about the land. Have them look at the map on page 212. They should notice the way the arms of the Niger and Benue rivers form a large Y. This Y divides the country into three regions. Each region has one or two groups of people who are more numerous than the rest and who have stamped the region with their own distinctive cultures. The largest groups are: the Hausa and Fulani (fū' lān ē) to the north of the rivers; the Yoruba (yō rū' bā) to the southwest of the river; and the Ibo (ē' bō) to the southeast of the river.

Have the pupils find the Hausa area on the map on page 211. Tell them that the Yoruba people formed the state of Oyo, and the Ibo lived to the east of Oyo and Benin across the river. Tell the class to look at the map on page 212 again and have them answer the following questions:

1. Do you think Kano was a Hausa city?
2. Do you think many Yoruba live in Ibadan (ē bād' ən)?
3. Which group of Nigerian people live in and around the city of Enugu (ā nū' gū)?

Tell the class they are going to make a large decorative map of Nigeria. Have them draw the map, put in the rivers, and shade in the Hausa and Fulani, Yoruba, and Ibo areas in different pastel colors. Have the pupils label each area. Tell them that as they learn about each area, they should add any information they can, such



- Look at the map above. Is Nigeria in a good location for trade with other parts of Africa? Explain your answer.

After independence, the country changed quickly. As you read this unit, see if you can figure out how the way of life in Nigeria changed. Try to answer the following questions: What were the changes that took place in Nigeria? Did they touch the everyday life of the Nigerian people? What changes are going on in Nigeria now?

THE NIGER

Look at the map of Nigeria on this page. What is the most important geographic feature of the country? *Niger* means "great river." Can you guess how Nigeria got its name?

In West Africa, only two rivers can be used for long-distance transportation. The Niger is one of them. Ships cannot sail on the river all year round, however. This is because there are places where the river is not very deep. During the dry season, the river gets even lower in these places.

Some parts of the river have rapids—places where the water flows very quickly. Often it flows over and around rocks. In those areas, passages for boats have been built.

- What do you think the weather is like during the dry season?
- Why are ships not able to sail in rapids?

The dry season In most of Nigeria, it does not rain from November to March. Because the weather is so hot in Nigeria, the water in the river dries up in many places. Then, only small boats with flat bottoms can be used in the low places of the river. The Nigerians have tried to solve this problem. They built reservoirs and dams. Still, Nigerians cannot store enough water to last through the dry period.

The Niger flows into the Gulf of Guinea through several channels. These are the places to which traders from Europe used to come for palm oil and slaves. They called these deep channels the Oil Rivers.

THE LAND

Northern and southern Nigeria are very different. Look at the pictures on page 214. Describe Nigeria's land. In what ways is the land in the north and the south different?



◆ gin' ē

◆ A channel is a body of water joining two larger bodies of water.

The canoes in the picture are loading cargo at the port of Yelwa, which is near the western boundary of Nigeria. Yelwa is also on the Niger River—one of the oldest transport routes in the country. Once boats could not have sailed all the way from Yelwa to the sea. Now they can. Can you guess why?

as natural resources. They can write in or draw in a symbol of what they want to add, such as a few trees for forests or a can for tin.

Have the class read the rest of page 213 and 215. Then have them look at the map on page 215. Ask: "What kind of land does the area around Kano have? Do you think the picture on the top of page 214 shows that area? Look at the pictures on page 217. What do they tell you about Kano? What do you think the houses of the north are made of? Turn to the map on page 223. From the information on this map, can you tell me what resources might be carried by the camel caravan shown on page 214? What do you think might be loaded onto the trucks?"

Inform the pupils that the Hausa settled northern Nigeria a long time ago. The Hausa learned to farm and to make leather and cloth goods. They built walled cities and trading posts. The Fulani—goat, sheep, and cattle herders—came later. A little less than 600 years ago, the Hausa became Moslems. This conversion to Islam, the religion of the Arabs, drew them closer to the Arabs. They learned Arabic mathematics, philosophy, and history, the Arabs' method of training soldiers, and their ways of ruling—which were among the most advanced in the world at the time. They also began to trade more with the Arabs. The result was that the Hausa became wealthier and Kano became one of the most important of the Hausa states. The Fulani also became Moslems and later challenged the power of the Hausa. The people of Bornu were much like the Hausa, but they had accepted Islam before the Hausa did.

Have the class look at the map on page 215 again. Have the pupils trace the forest area west of the Niger-Benue rivers. Tell them that the forests are less thick in that area and that the climate there is a little cooler and drier. The soil is richer. It was there that Oyo and Benin developed.

Tell the class that scholars know that the technology and arts of Oyo and Benin were advanced because beautiful objects of bronze, clay, and ivory have been found. Bring pictures of this art into class and discuss the skills and way of life they indicate. They show the political and military power of the kings. They also tell about the religion of the people. The inhabitants of both Oyo and Benin believed that nature was controlled by spirits. Also help the pupils discover that the sculptures show the king of Benin as a very important person. Tell them that he was worshiped as a god. He ran the government with his ministers—the chiefs who gave him advice. Under their leadership, Benin grew rich from trading weapons, cloth, agricultural goods, and iron. The kingdom of Oyo grew strong also. Both kingdoms entered the slave trade that became so important after the Europeans came to West Africa. Both areas grew rich for a while, defeating the tribes around them and controlling the trade in their areas. Eventually, too many chiefs acquired guns and fought each other. First, Benin was destroyed. Then Oyo came to an end when it was attacked by the Fulani of the north.



Nigerians in all parts of the country have learned to use the plants and animals around them. Look at the pictures on this page and explain how nature supplies people's needs.





The land along Nigeria's coast is very low. It is hillier farther inland. But most of northern Nigeria is high, flat tableland. There are no very high mountains. There are no sudden changes in temperature or types of land. Slowly, little by little, the land changes.

Swamps and deserts If you walked from southern Nigeria to its north, you would see many changes. You would start near crocodile-filled swamps, walk on through thick, dark forests, and end up in almost desertlike lands. But if you thought about it, you would see that you never noticed where you left one kind of region and entered another.

Look at the map of Nigeria's plant life on this page. Compare it with the pictures of Nigeria's land on page 214. Can you figure out which pictures go with the different regions that are shown on the map? Do you think different kinds of animals live in these different regions?

► What do you think tableland looks like? Why do you think it is called that?

► Look at the map above. Which river joins the Niger in central Nigeria? What is the land like in that part of the country?

Ask: "Did different parts of the United States become wealthy at different times? Are all parts of the United States equally wealthy today? Why are some places very poor? Was the South, with its plantations, rich at one time? Did the cotton mills and factories of the Northeast help make it wealthy? Did oil help make the states around the Gulf of Mexico wealthy? Have corn, wheat and cattle made the Midwest rich? Can people grow wealthy merely by having resources? Is it important for people to organize their resources—the way they are grown or acquired and the way they are used and sold? Are coal-mining towns of today as important as they once were in the United States? Do you think they will ever become important again?"

Activity

Divide the class into four groups. Have each one find information and/or pictures of Lagos, Kano, Ibadan, and Port Harcourt. Have each group report what they find to the class.

LESSON 2 (pp. 216–219)

Lesson Objectives: Learning about the different kinds of resources and products Nigeria has. Knowing that the people in the many regions of Nigeria live in different ways.

Lesson Skills: comparing and contrasting, inferring, analyzing information

Introduction

Have the pupils read pages 216–219. Then say that you are going to tell them about three people who live in different parts of Nigeria. They should try to figure out which region you are describing.

Lesson Development

1. Daro (dä' rō) sat just outside the city walls, watching a caravan pass through the city gates. As the camels passed him, he noticed they carried salt and dates from the desert and peanuts and cotton from the farms of the district. After the caravan passed, Daro went into the city.

He walked through the marketplace. There he saw children selling peanut candy, leather toys, caps, and sesame seed cakes. The calls of penned sheep, goats, and cattle added to the noise. Men wearing traditional robes and caps stopped to talk with each other. Women could be seen in the streets, too. The young girls ran about selling things and talking with their friends; older women were veiled or shawled. Like Moslems everywhere, Hausa women were taught to act modestly and to remain hidden from view as much as possible. Daro knew that each house he passed was the same. Each of a man's many wives lived with her children in a separate house around a common courtyard.

◆ bau' bab

◆ Can you name a water-storing plant that grows well in dry areas?

◆ här mē tan'

◆ A yam is like a sweet potato. It grows well in very warm areas.

The north Do you know what a desert is? Is it a difficult place in which to live? Why? The north has an area of desert. It also has grasslands and open woodlands. The grass grows as tall as 12 feet during the rainy season. Sometimes there is a tree standing all by itself in the tall grass. It is called the baobab tree. This tree can grow in dry lands because it stores water. The northern land also has many low bushes and plants that store water.

The people who live in these areas suffer from November to March. That is when the harmattan comes. The harmattan is a hot, dusty wind. When it blows, people may go for weeks with very little water. But in March, the rains begin to fall. And suddenly, everything turns green.

Although it is dry in the north, the soil is rich and is good for farming. Around April, the farmers begin to plant. The main crops are yams, sweet potatoes, grains, cotton, and peanuts. Only one crop a year can be grown. Why do you think only one crop can be grown in the north?

Look at the pictures on page 217. What else do the people of northern Nigeria do for a living besides farm? Do you think that any of these industries are new? What would make you think that they are old? Can you explain how they are related to the land?

The south In the south, the rains are very heavy. Everything is always green. There are many forests, dark and thick, where the air always stays damp.



There are millions of insects in the hot, damp climate of southern Nigeria. One of the most dangerous insects is the bloodsucking fly called the tsetse fly. It kills cattle and horses and causes sleeping sickness in people.

Mosquitoes also like the climate in the south. Some of the mosquitoes cause malaria, a serious disease in which the patient suffers from chills and fever.

Forests Most of the forests in southern Nigeria are rain forests. There, the branches of tall trees meet and form a roof through which the sun cannot shine. Around the trees are thick vines. In many parts of the dark rain forests, the ground has only a few plants. Only where the forests have been cut does the sun shine through. Where the sun reaches, bushes, smaller trees, and vines grow thickly. There is not even space for walking. Snakes, insects, birds, and monkeys are found in great numbers.

Nigeria's coast has many swamps because the land is so low. Water from the Gulf of Guinea floods this land time and time again. Crocodiles like this watery mudland. There



*Kano is a northern city.
It is famous for its dye pits—
pools of dark blue dye—
and for its goatskin leather.*

◆ tset' sē

◆ Climate (klī' mit) is the kind of weather a place has.

◆ Is this good farmland?
Is it a good place in which
to live?

In another part of the city, Daro saw groups of young boys sitting around their teachers, learning prayers from the Koran, the holy book of the Moslems.

Now Daro reached the mosque—the Moslem temple—which he had come to the city to visit. His family had just told him that he had to go to a foreign university to study. And he wanted to pray for help in remaining strong in his faith so he would not leave his old ways.

Ask: "In what part of Nigeria did Daro live? What was his religion? How does Islam affect the everyday life of the people? Do you think many of the people who live here want to learn modern skills?"

2. Ifani (ē fān' ē) loved her home. She had just finished reading a book about people in Europe who had small families—only about four or five people. She wondered why they did not feel lonely. Her own family had about a thousand people in it and they all lived together in one compound. All of their dwellings were connected, and each one opened onto a central corridor.

Ifani was very proud of her mother, who did not farm, because no Yoruba women farmed. Instead, she owned her own business. Once she had been the very best trader in the market, and now her tobacco firm was known throughout Nigeria. Ifani knew her mother was her father's favorite wife. She had persuaded him to let Ifani go to England to study medicine.

Ifani's father was a chief. He had gone to school to learn the new ways of the English. He had used his learning to help his family members. His new learning had also helped him become wealthy from trading the products of his cacao trees. Ifani knew that her father hoped to be chief of all the Yoruba people one day.

Ask: "In what part of Nigeria do the Yoruba live? How do the Yoruba men and women earn their livings? Is the life of Yoruba women different from that of the Hausa women?"

3. The people in Okezie's (ō ke' zē) village were all related. Each family lived in a compound—individual huts grouped together within a wall or fence. The huts were not attached like those of the Yoruba.

Okezie was rushing back to his mother's hut to study. He wanted to be an engineer when he grew up, but he found some of the mathematics very difficult. He felt he must succeed. Most of the villagers were uneducated farmers. But they all wanted their children to be educated. So the villagers started a campaign to get a school for the village. They got the school, and now they were trying to get a clinic.

Okezie's parents were successful Ibo. His father owned many oil palms and was an important man in the palm oil trade. He had taught Okezie not to be lazy. Because their soil was so poor, Ibo had to depend on their own hard work in order to succeed. Once Okezie's mother had helped his father to farm and to make palm oil. But now machines did this work, and she worked in an office in a nearby city.

◆ Mangrove trees are trees whose branches root down into the ground and become new trees.

◆ kə kā' ō



Cacao Seed

The crocodile usually stays near the water. It is a fast swimmer, and can run on land, too.

are also tall mangrove forests in the swamps. Their long, thick roots grow close together.

Cacao trees grow well in western Nigeria. Cocoa, from which chocolate is made, comes from the cacao tree. The cacao tree is easy to grow. Can you see why so much cocoa comes out of Nigeria?

The east East of the Niger River, the land is covered with thick, dark rain forests. Does this mean that the soil there is rich and good for growing crops? The answer, surprisingly, is no. This is because the climate is so hot and humid that dead leaves and plants crumble away very quickly. Soil needs dead plants to make it rich. But in the rain forests, plant material does not stay in the ground very long. The soil is loose. Heavy rains wash plant material deep into the ground or into the swamps. In these places, plants cannot reach down far enough to root in the enriched soil.



A money tree in sandy soil The oil palm, an important source of money, grows wild and thick in the poor soil east of the Niger. In order to grow, it needs at least 60 inches of rain for a period of eight months. Some of the richest oil-palm forests in the world are found here. One of the reasons that Europeans came to Nigeria in the past was to buy palm oil. Can you see why the oil palm might be called a “money tree”?

In the east, farming is hard work. There, as in the west, farmers have to clear the land. Then they plant their crops in the same plot for a few years. Yams, cassava, and corn are the main crops. When the food in the soil is used up, the farmers move on to an unused area nearby. The old land becomes wild again. It is on this wild land that the oil palms grow. Do you think the oil palm is hard to care for?

◆ Find out how many inches of rain falls where you live. Is 60 inches a lot?

◆ Cassava (kə sā' və) is a jungle plant with roots. The roots can be pounded into food.

1. In what continent is Nigeria located? Is it anywhere near the ocean?
2. When did Nigeria become independent? From what country did it win its independence?
3. What does the name “Niger” mean? Why can large boats not sail up the Niger all year round?
4. Describe the differences between the land of northern and southern Nigeria. What kinds of crops are grown in the north? in the south?
5. What is the harmattan?
6. Why do the Nigerians not raise cattle and horses in the areas where there are tsetse flies?
7. In what part of Nigeria does the oil palm grow? Why is it called the “money tree”? About how much rain a year does the oil palm need in order to grow?
8. Where in Nigeria are cacao trees grown? What is cacao used for?

Ask: “How are the Ibo different from the Yoruba? What kind of work do Ibo women do? What do the Ibo seek as signs of success? the Yoruba? Do you think many Ibo go to northern Nigeria to find jobs?”

Activity

From pictures in the text and descriptions you have given them, have the pupils make clay models of a Hausa, a Yoruba, and an Ibo compound.

Answers (p. 219)

1. Nigeria is located on the west coast of Africa, along the Gulf of Guinea, an arm of the Atlantic Ocean.
2. Nigeria became independent from Britain on October 1, 1960.
3. Niger means “great river.” Large boats cannot sail the Niger all year round because the river gets too low in some places during the dry season.
4. Southern Nigeria is a hot, humid area with mangrove swamps and thick rain forests. Northern Nigeria has grasslands and near-desert lands in some places. Peanuts, yams, sweet potatoes, cotton, and grains are grown in the north. The south raises yams, cacao trees, kola nuts, cassava, and oil palms.
5. The harmattan is a dry wind of the north.
6. Tsetse flies kill cattle and horses.
7. The oil palm of southern Nigeria is called “a money tree” because it grows in the poor, acid soil of southeastern Nigeria and can be used to make many different products. It needs about 60 inches of rain for about eight months of the year.
8. Cacao trees are grown in southwestern Nigeria. Cacao is used to make cocoa.

LESSON 3 (pp. 220–223)

Lesson Objectives: Understanding that the British came to Nigeria and developed industries based on the natural resources of Nigeria. Knowing that the British taught the Nigerians a new way of life.

Lesson Skills: observing, reading maps, inferring

Introduction

Ask: "Which is the shortest highway between New York and San Francisco? How do you find out which is the best route to take? What would you do if nobody knew? Would you take any route and hope for the best? How would you try to find India if no one knew the way there?"

Lesson Development

Have the class read page 221. Tell the pupils to try to imagine the time before trains, airplanes, and globe maps—before people knew what the earth looked like. Inform the class that a little more than 700 years ago, no Westerners or Chinese had ever traveled to each other's land; nor had any Europeans traveled to the interior of Africa. Ask: "Can you guess what part of Africa Europeans had visited?" (North Africa)

Industry and a Way of Life



ARRIVAL OF THE EUROPEANS

More than 500 years ago, Europeans began to explore the world. After a time, they began looking for new places to trade. Travelers like Marco Polo had told about distant lands that were filled with exciting riches and goods. Some travelers brought back some of the foreign goods with them. They showed these to their friends and to the rulers of their countries. European countries were eager to find routes to the wealthy lands they heard of. Soon, big European countries were sending out sailors to find ways to these places. One of the places sailors went to explore was Africa.

The British The British came to Africa about 300 years ago. They were almost the only Europeans trading with the people of Nigeria. They traded for slaves and palm oil. Slavery was ended by the British in 1824. So the British began to buy more palm oil. At that time, the British were in the middle of their Industrial Revolution: they were building more and bigger factories, and inventing new machines. They were finding new ways of doing things. Their trade with other countries increased. And their need for palm oil kept growing.

The British gave the Nigerians guns, ammunition, cloth, brandy, scissors, mirrors, and kettles. What did the British want the palm oil for? They used it for oiling engines, for making soap, and for making a cheap substitute for butter. Some British and Nigerians became rich from the palm oil trade.

◆ Marco Polo was an Italian who traveled to China.

► Why do countries trade with each other?

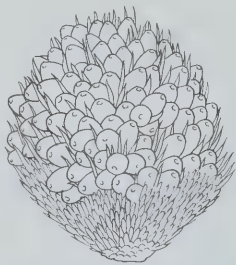
Inform the pupils that the explorers of West Africa were not looking for Africa but for a water route to China, India, and the islands nearby. Marco Polo left for China in 1271, but it was not until 200 years later that Portuguese navigators sailed around the tip of Africa, finding a water route to the east. On the way, they had discovered that Africa had wealth and products they wanted. The Portuguese landed in 1472 at what is now Lagos. One after another, ships came to West Africa looking for pepper, gold, ivory, and slaves. Nigeria did not have gold or ivory. Ask: "What did Britain find to trade in Nigeria?" Explain that Britain developed a trade monopoly—it was the only European country to trade with Nigeria. But the British traders did not go inland. Instead, they traded with chiefs along the coast. Ask pupils: "For what reason would Britain want to trade with the Nigerians? Why did they want palm oil? What did they do with the slaves?" Explain that although the British had a trade monopoly, they did not take control of any land in Nigeria until 1849. And they did not gain control over all of Nigeria until 1900.

Have the class read pages 222 and 223. Ask: "How did the British take-over of Nigeria affect the people? Were the Nigerians used to controlling their own trade? Would anybody want to hand over trade routes to other people? Why did many Nigerians want to keep on trading with the British?"

Ask: "Does anyone in the class know what a monopoly is?" (It is the sole ownership of a product or utility by one person or one company.)

Ask: "Why do you think the British taught the Nigerians to read and write English?" Tell the class that Nigeria has over 200 different languages. Ask: "Would the Nigerians have had words in their languages for the different machines and tools used by the British? Do you think they counted and multiplied numbers in the same way? Was it easier for the British to teach the Nigerians their language than to add new words in the many Nigerian languages, and then learn all the different languages?"

Ask: "Is it best to have just one or two major languages in a country? Would it be hard to print books for schools in so many different languages? Would it be easy for people to do business throughout the country with so many languages? How could people understand each other and work together in the government? How would you choose one of the many languages to be the major language? Would other people accept this?" Explain that even though the British no longer are in control of Nigeria, English is still taught in many schools because the Nigerians cannot agree on which of their languages should be the major language.



◆ A resource (rē' sôrs) is a supply of something that an area has.

■ Why do you think the British did not want Nigeria to set up its own trade?

Every part of the nut from the oil palm is useful. The oil shown in this picture comes from the kernel—the hard seed inside the nut. It is used to make margarine. The skin of the nut is used to make soap and grease.

More and more Nigerians entered the palm-oil business. They gathered the nuts from the oil palms. Next, they cracked the nuts and pressed them for oil. After the oil was sold, it was graded into good and poorer oil. Then it was barreled and sold to businesses far away in Great Britain.

Other resources The British soon found they could use other resources that Nigeria had. Look at the map of Nigeria's resources on page 223. What resources does Nigeria have?

At first, the people of Nigeria controlled their own trade. They would not let the British build trading centers inland or travel up the Niger River. This was because Nigerians wanted to start their own trade with other African nations. But the British did not want this to happen. The result of this disagreement was war.





The British had a good supply of guns and bullets from their factories at home. By 1900, the British controlled all of Nigeria.

The British decided to open up northern Nigeria to trade. They used ancient trade routes to get there. But the going was slow and difficult. Can you explain why?

The British knew that they could do things faster. The kinds of factories they had in Britain could just as well be built in Nigeria, they thought. Then more palm oil could go out faster. The British, therefore, began to build roads and railroads. They brought new machines to Nigeria to be sent over these roads. They began to teach the Nigerians how to use the new machines. They taught them how to fill out British trade and work forms. Many Nigerians learned to read and write English in this way. The British also taught Nigerians to build new kinds of buildings, and to use British money.

► Look at the map above. What goods are probably taken to Kano to be sent elsewhere? What goods are shipped from Lagos and Port Harcourt?

◆ Trade and work forms are special papers which give information about products and workers.

Activity

Bring in the game of Monopoly and ask: "Has anyone in the class played Monopoly?" Explain the purpose of the game. Next, have the pupils try to substitute for the utilities and properties on the board Nigerian resources, cities, services, and transportation routes. The names need not be real names. For example, substitute Niger River Transport for B & O. Make sure the pupils understand that all of the utilities in the game should be utilities and all substitutes for the same color properties should be of the same type. For example, for all yellow properties, cacao products might be substituted. In another version of the game, pupils can use a political map of Nigeria and the map on page 223 to see where different resources are located. By comparing the two maps, pupils can make a list of the cities near the natural resources. They can then try to control cities near an important resource to give them a monopoly of that resource. All properties of one color would then be cities near one particular resource or product. Properties such as harbors, ports, airports, and railroads might be included.

LESSON 4 (pp. 224–230)

Lesson Objectives: Understanding why the Nigerians began to move to the cities. Understanding why the Nigerians wanted to become independent from Britain. Knowing that industrialization has brought both benefits and problems to Nigeria. Recognizing the difficulty of getting people who have very different cultures to work together.

Lesson Skills: comparing and contrasting, “reading” pictures, reading diagrams and charts, inferring, observing, analyzing information

Introduction

Ask: “Why do many Americans leave farms to go to work in cities? What do cities have that farm areas do not have? Are jobs in cities and in country areas very different from each other? Do you think a nation today can make the money to buy new machines and equipment, airplanes and railroads, and so on, from farm products alone? Do countries need different kinds of industries? Can people afford to buy things to make their lives more comfortable if there are no industries to give them jobs?”

Lesson Development

Have pupils read page 224. **Ask:** “Could the picture on page 224 have been taken in the United States? What are people in the picture doing that is different from something Americans do?” (The drivers sit on the right side of the cars.) Tell the class to look at the pictures on page



Nigerians hope to expand their auto industry soon. Few cars or buses used in Nigeria were made there.

◆ Waterworks are pipes, pumps, and other things that bring water from one place to another place.

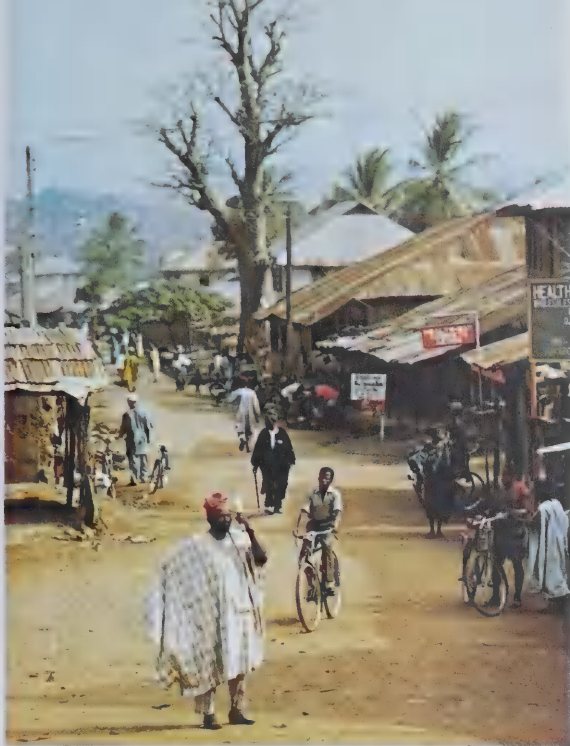
◆ Nigerians used money before the British, but they exchanged most things through trade. Do you think the change from trade to money changed the Nigerian people's way of life? In what ways?

THE BRITISH AND INDEPENDENCE

Working for the British Now, Nigerian chiefs had to collect taxes, keep peace, and get people to work for the British. The people helped build roads, bridges, railroads, electric power plants, and waterworks. The British also needed people to work in the government. Therefore, they began to teach a few of the Nigerians new ways of doing things.

To the city More and more people began to move to the growing cities to find jobs. The British made the Nigerians pay their taxes in money rather than in goods. So people began to go to the cities to earn money.

Many of the people who went to the cities to work did not go there to stay. Even today, many Nigerians work in cities for a few years. Then they return to their villages with whatever money they have saved.



Signs of change can be seen throughout Nigeria. How do the pictures on this page show change?



225. Ask: "Why couldn't these pictures have been taken in the United States? How are the people in these pictures living a different life from ours? Do you think that bicycles and motorcycles mean a lot to the Nigerians? Do you think all Nigerian boys aim at owning a bicycle one day?" Tell the class that one of the most important jobs in Nigeria today is driving a truck. Ask: "Why are truck drivers so important? How do you think most goods get to the cities from the villages? Do the villages depend on truck drivers for their needs? How are goods brought to your city or town? Do you know whether most towns in the United States are serviced by railroads? Are many things brought in by trucks?"

Instruct the pupils to read page 226 and the first part of 227. Ask: "If you went to a foreign city to live, would you look for people who could speak the same language as you? Would you look up any relatives of yours who lived there? Would you ask them for information about life in the city? What would you want to know about the city? Would you know how to go about finding an apartment if you had always lived in your own house in a village and your village had no apartment buildings? Would you feel comfortable in a place where practically everybody is a stranger to you? Would people from villages have to learn a whole new way of life?"

Ask: "Why do you think the Yoruba find it easier to live in cities than other people of Nigeria? Why are newspapers important agents of reform? What are some other important agents of reform and change?" (radio, television, and schools)

Tell the class to read pages 227 and 229. Have the pupils look at the chart on page 226. Ask: "Why does the United States have so few farmers? Does the United States produce many agricultural products? How are many farms run in the United States? What kinds of tools and machines are used? Do you think Nigeria uses the same kinds of tools and machines? Is it easy to use big tractors in rain forests? Can Nigerians use tractors in the north?"

Have the children discuss the many different kinds of jobs that are created by one natural resource alone. For example, lead them to discover that tin-industry jobs can include miners, supervisors, mining engineers, metallurgical engineers, chemical engineers, lab technicians, makers of tin-industry equipment, truck drivers, maintenance crews, office personnel, salesmen, administrators, and so on. Now have the pupils discuss the difference between just having a natural resource and using it for industries in one's own country. Ask: "Why is a country that develops its own natural resources usually richer than one that produces resources that others develop?"

Instruct the pupils to look at the chart on page 229. Ask: "How do Nigeria's exports compare with those of other countries in the world? Why do you think the value of the goods exported by the United States and France is so much higher than that of goods from Nigeria and Ghana?"

Did the British bring new tools and ideas to Nigeria? How do you know?

Do different groups in the United States try to keep special ties with each other? Do you think people do this all over the world?

How do these people help bring change to Nigeria?

People with high school and college educations got the cities' better jobs. People without this education took new kinds of jobs in mines and factories. Today, Nigerians do the kinds of jobs shown on page 225. What kinds of jobs are these?

Connections with the tribe The Nigerian people come from many different tribes. Although people from different tribes mix in the cities, they are not always friendly with each other. Soon after they come to the cities, they join groups of their own people. The members of each group try to help each other. In this way, the ties between tribal villages and cities are kept. When these workers return home, they tell the villagers all about the city and how things are done there.

Workers like these, who came to the cities in the 1930s, helped Nigeria win its independence. They formed groups that worked to



get hospitals, schools, roads, and bridges in their villages. They began asking for the same kinds of jobs and salaries as the British had. Some workers started newspapers in which Nigerian demands were printed.

The British gave the Nigerians more rights. They gave them more say in their government. Finally, in 1960, they were forced to give Nigeria its independence.

MODERN INDUSTRY

Changing a way of life Today, a large number of Nigerians farm for a living. Look at the chart on page 226. How many Americans are farmers? How many Japanese work at farming? How many Brazilians work at farming? Which country do you think is least industrialized?

But Nigerian industry is growing. Nigeria has great supplies of tin. People mine the tin from the ground. Then tin ore is sent to factories where the metal is **refined**. Finally, the tin is sold. Nigerian people work in both the mines and the refineries.

Oil is another Nigerian resource. Scientists think that Nigeria has great amounts of oil beneath the soil. In fact, oil may become one of Nigeria's most important industries.

Nigeria today needs more industry. Many of its factories prepare raw materials like peanuts, palm oil, and cacao. But Nigeria also needs factories that will make other things the country needs—tractors, drills, cars, refrigerators, and frozen foods. It also needs factories to make things people in other coun-

► How do newspapers often help change things?

◆ Ore is metal mixed with rock, sand, or dirt. The metal has to be taken out of the ore, or refined, before it can be used.

► How do you think an industry can be built up around oil? Recheck the steps of the tin industry for some hints. Can you name some products made from oil and tin?

Inform the class that industrialization touches people's lives in many ways. One of those ways is discussed on page 228. Have the class read the feature. Ask: "Why do you think the northerners and the southerners did not get along? Do they have different customs? Do they speak different languages? Do they think about life in different ways? Would you resent it if other people entered your land, made more money than you, and lived better than you? Would you feel you were being treated unfairly if you worked in a foreign city and held a responsible job but were not treated with friendliness, courtesy, or respect? Would you resent it if you felt your people were not being fairly represented in the government?"

Explain that Nigeria is a federation. At first, Nigeria was divided into three regions and had a weak central government. This government was troubled by regional jealousies and rivalries. Because of the Ibo and Yoruba attitudes toward education and success, and because of the importance of their natural resources, the south was becoming rich faster than the north. But the north was the larger region and had more people, and so it was the more powerful group in the government. It had greater say in the passage of new laws, the industrial policy of the country, education, and so on. The south resented this. Also, many of the smaller tribes resented their lack of power in the regional governments. Ask: "Can you understand why Nigeria had a civil war? Can you understand why, in such a situation, a general took power and why Nigeria came under the control of the military?"

Tell the class that after the civil war, Nigeria was redivided into 12 states. Ask: "How did the industrialization of Nigeria help lead to civil war? Does anyone know if the Civil War in the United States was partly caused by similar factors? Do northerners and southerners in the United States today still have regional loyalties? Would you answer the question 'Can you get rid of regional dislikes in 60 years?' differently now?"

Tell the class that one of the big problems of industrializing countries everywhere is getting money—or *capital*—to start new businesses and industries. Ask: "Do you know anyone who has opened a small business? Where did he get the money to open a business? Did he save it by himself? Did his wife work? Did anyone help him by giving him some money? Did he get a loan from a bank? Where does the bank get the money? Do banks need many people who deposit their savings? Does anyone know what a bank does with the money people give it to save for them? (It uses the money to make more money; it lends people money; it buys into other businesses; it buys land; and so on.) What would happen if people who had savings at a bank suddenly withdrew all their money from it? Does anybody know what the Great Depression was?" Have the pupils ask relatives what it was and what life was like then. Tell the class that actions such as people's withdrawing their money from banks helped bring on the Great Depression. The government has

PROBLEMS OF INDUSTRY

Learning new ways has brought problems to Nigeria. Many Nigerians who have gone to high school or college do not hold jobs in industry. Instead, they work in hospitals, in schools, and for the government. The people of the north, who did not want a European kind of education, could not get these kinds of jobs. So, members of the Southern Ibo (ē' bō) and Yoruba (yō rū' bā) tribes traveled north to fill these jobs.

But the northerners did not want good jobs to be taken away from them. The southerners were not treated well in the north. Nigeria's government added to the problem. There were more northerners in the government than southerners. Southerners, especially the Ibo, felt that many laws passed were unfair to them. Finally, in 1960, war broke out.

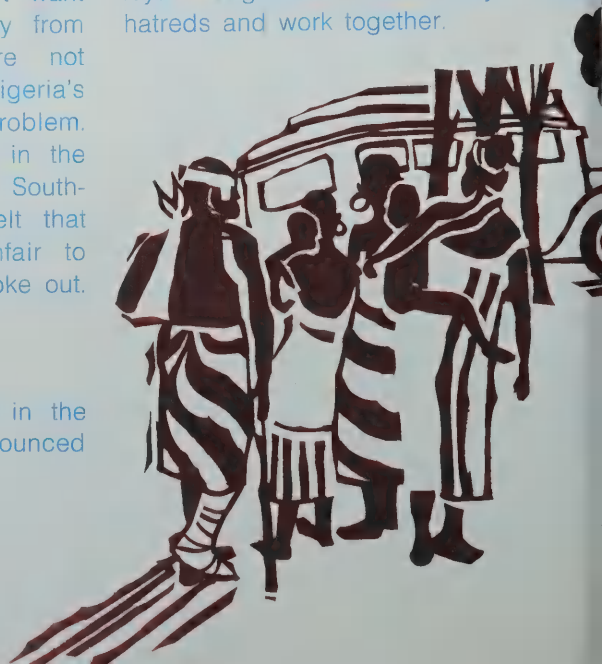
Biafra

The Ibo fled to their forests in the southeast. There they announced

that they were no longer part of Nigeria. They called their new state Biafra (bē āf' rə).

During the war, the Biafrans suffered terribly. They finally surrendered in 1970. The Nigerian government made peace with the Biafrans. They divided Biafra into small regions that again became part of Nigeria.

Today, Nigerians are still divided. The government has the hard job of making all of its many people feel loyal. Nigerians must bury tribal hatreds and work together.





This picture shows the old and the new in Nigeria. Which things are modern? What do you think this man is thinking?

tried to make sure there will be no more Great Depressions by insuring people's money up to \$20,000. That means that people can always get \$20,000 of their money even if there is a bank emergency.

Ask: "Does the amount of money that people, government, and businesses make determine the number of roads, railroads, cars, television stations, and so on, that a country has?" Tell the class that in many countries the government owns and runs the railroads. Ask: "Who owns and runs the railroads in the United States? Who built them?" (Individual states gave rights to build railroads to people like Cornelius Vanderbilt and James J. Hill.) In many countries today, only the national government has enough money to build and keep up railroads. Ask: "Do you think the wealth of the nation has anything to do with the miles of railroads it has?" Have the pupils look at the chart on page 230. Ask: "Why does New York State have more railroads than Nigeria? Why does Japan, less than half the size of Nigeria, have so many more railroads than Nigeria?"

tries will buy. All of these new ways of living will help Nigeria grow into a strong, industrial nation. What does the following chart tell you about the value of the goods Nigeria sells to other countries?

COUNTRY	WORTH OF GOODS EXPORTED IN 1970
Ghana	\$433 million
Nigeria	1.2 billion
Soviet Union	12.6 billion
France	17.7 billion
United States	42.5 billion

Nigeria is rich in natural resources. But not enough people have been able to save money

Activities

1. Have the pupils pretend they are Nigerian schoolchildren and write a composition on "Why I Want a Modern Education."
2. Tell the pupils to write a story telling how they, as children, met and made friends with the child of an enemy during the Nigerian civil war. Encourage the pupils to use their imagination. Tell the class that some of the stories they have seen, heard, and read about the American Civil War should give them ideas for situations.

Answers (p. 230)

1. The British came to Africa about 300 years ago. They wanted to trade. Since they did not find gold and ivory in Nigeria, they traded for slaves and palm oil.
2. The British gave the Nigerians guns, ammunition, cloth, brandy, scissors, mirrors, and kettles in return for palm oil.
3. Nigeria has tin, cacao, iron, cotton, peanuts, petroleum, coal, sesame, and rubber.
4. The British taught the Nigerians how to build roads and railroads, how to use new machines, and how to use money as a medium of exchange.
5. The Nigerians began to go to the city to work for money to pay taxes and to buy some of the new things the British brought to Nigeria. They wanted to have money to save for their old age, for new businesses, and to help their villages.
6. Many city workers returned home and told the villagers about life in the city. They also formed groups to get important things like schools and clinics for their villages. Some started newspapers to tell people what their rights were and what Nigeria needed in order to become independent in every way.

- Do you think that everyone who lives in a country with natural resources is rich? Why or why not?

to open factories. Also, many people who have money are afraid to go into a new business that they do not understand. Most of them grew rich through trading — not by making goods.

Industry also means more paved roads, more railroads, and more skilled workers. Look at the chart below. Compare Nigeria with other places. What does the chart tell you?

PLACE	AREA IN SQUARE MILES	MILES OF ROAD	MILES OF RAILROADS
Nigeria	356,668	56,000	2,356
France	211,207	888,559	24,000
Japan	142,811	613,500	29,300
West Germany	94,000	209,000	29,000
New York	49,576	107,716	6,505

For some skills, people need education. So more Nigerians need to go to school. Only about 30 percent of Nigerians can read and write. In the United States, almost 90 percent of the people can read and write.

1. When did the British come to Africa? Why did they come?
2. What goods did the British give the Nigerians in return for palm oil?
3. What natural resources besides palm oil does Nigeria have?
4. Did the British teach the Nigerians any new ways of doing things? Name three of the new ways.
5. Why did the Nigerians begin going to the city to work?
6. How did city workers help bring change to villages in the countryside? How did they help their country become independent?

Lesson Objectives: Understanding that the Nigerians have combined their traditional ways with modern ones. Knowing how villages are changing. Understanding how conflicts come about.

Lesson Skills: comparing and contrasting, analyzing information, inferring, “reading” pictures

Life for the People

Introduction

Ask: “What do you think of when you think about colonial America? How did people live—in big cities, in towns, or on farms? Did the colonists value hard work? Did they value education? Did they value their freedom? What did they want from life in their new land? Were they religious people? Do you know what kind of a country they hoped to build? Do you think they ever dreamed of a country like the one we are living in now? Do you think the Nigerians can imagine what Nigeria will be like in 100 years? Do they have any clues?”



Lesson Development

Have the class read pages 232–233. Ask: “What Nigerian values have you learned about in this unit? Do Nigerians have a strong feeling for their families, including all their relatives? Do they feel close to their villages? Do all Nigerians want their country to be modernized? Why did the Nigerians begin to want money? Do you think they want money for the same reasons today? Did the Nigerians live well without money before?”

Have a volunteer read the poem on page 232 aloud. Ask: “What feeling does the poem express? Do Nigerians feel close to their land? Do they feel that their people have used it since the beginning of time? Do you feel the same way about your land? How do you feel about your land? Do you think farmers feel closer to the land than people who work in the city? Do Nigerians look forward to the future?”

◆ Lagos (lā gās) is the capital of Nigeria.

◆ Which stanza tells you about the new things in Nigeria? Which tells about things that have never changed?

◆ val' yūz

Nigerians always see the old and the new in their country. Trucks pass camels on the roads. Fishermen use the same kinds of nets their ancestors used. But they see modern ships sailing in the waters they fish from. Farmers with plows in their hands see modern machines drilling for oil.

Some Nigerians are sad to see the old ways go. Others look gladly to the future.

Read the following poem. What does it tell you about living in Nigeria today?

O Nigeria,
Land of the Great River,
where the dry wind blows
and the rains fall. . . .
Land of shadows
where the . . . drums sound
through the ageless . . . trees.
O land of mine
since the beginning of time.

No forest now in Lagos,
no slave ships sailing past.
Gleaming metal, shining metal,
motors racing into the future.
A new land,
this land of mine
since the beginning of time.

NEW WAYS

Questions about change What happens to people whose way of life is changing? What happens to people when they find new ways to make a living? What happens to people's values?



Many Nigerians live in different cultures. This man from the north is wearing the beautiful clothes of his tribe. A ceremonial sword is near him as he watches a tribal parade.

Have the class look at the picture on page 233. Ask: "How does the picture tell you the man, a Hausa, is part of a warrior society?" Tell the class that the most important parades in the north are held on Moslem feast days. Ask: "If people believed that a modern education threatened their life—their religion, their ways, even the clothes they wore, the food they ate, and the importance of holidays and parades, such as the one this man is watching, would they want modern education for their children? Why do you think that the people of northern Nigeria are beginning to send their children to schools for a modern education even if they do not really want to? Do you think some northerners are beginning to realize that modern education has some value?"

Values are things that are important to people. In some countries, money is an important value. In some countries, religion is a very important value.

Scientists can study values in many ways. **Anthropologists** often study how people live in simple farming villages. **Sociologists** usually study how people live and work together in cities. Anthropologists and sociologists have talked to many people in Nigerian villages and cities. They found life changing for many people. John Agba is one of these people.

► What values are most important to you? Is being fair important to you?

- ◆ an' thrə pol'ə jists
- ◆ sō' sē ol' ə jists

Tell the class to read pages 234–239, skipping the feature on page 238. The case study on these pages shows some of the kinds of changes that are brought about by modernization and a modern education.

Ask: “Do you think Mr. Agba is a Yoruba? Do most Yorubas live in villages in the rain forest? Could he be an Ibo? Are there Ibo villages within 100 miles of Lagos, do you think?”

◆ Islam (is' ləm) is a religion which has many followers in Asia and Africa. They believe in a god called Allah.

Many people in the villages make their own clothes and jewelry. The children learn the crafts of their tribe.

The man of the city John Agba lives in Lagos. Lagos is a big city. But Mr. Agba did not always live in Lagos. Once he lived in a farming village more than a hundred miles away. He came to Lagos to work for the government.

Not all farming villages are like the one Mr. Agba comes from. For Nigeria is a land of many peoples. In the north, there are people who believe in Islam. In the south, many people are Christians. People speak different languages, too. All people speak the special languages of their tribes. In some areas, people also speak English.

In the village Mr. Agba's village is in a clearing in the rain forest. Everyone who lives there is a member of the same tribe. Mr. Agba's father has been married many times. Each of his father's wives lives in a separate house, and Mr. Agba has many brothers and sisters.





For a long time, none of the Agba family could write. Still, they always remembered the ways to farm and the special beliefs and habits of their people. It is hard to farm in the rain forest. Everyone who lives in the village works very hard. Sons and brothers help each other in the fields. The more sons there are, the more food they can grow. Big families have always been good to have in a farming village.

The Agbas' village is a good one. It has the district post office and a health clinic. The people worked very hard to convince the government to build them that clinic.

School The village also has a school. It is not like the schools in the north. Years ago, boys in the north studied only the Koran. They learned to read prayers from it and remember them.

Lagos is the largest city in Nigeria. Most of it is on an island, just off the coast. Lagos is a modern city and has suburbs nearby.

◆ Why do you think it is so important to have a health clinic?

◆ The Koran (kô răn') is the holy book of the Islamic religion.

Ask: "Do the Agbas want their village to become more modern? What have they done to help it become more modern? What have they done to improve the life of the people? Why do you think John's family thought it was worthwhile to send him away to a foreign university? Do you think it was a hardship for the family to save the money to send John away to school? Would it be a hardship for your family? Why do you think John did not go back to the village to live? Do you think the village had engineering jobs for him? Is it easy to have more than one wife in the city? Would it be difficult to have more than one wife in an apartment? Do wives live together in the villages? How do you think the village wife spends her day? How would the life of a city wife be different? Would she spend as much time cooking or preparing food? Do wives in the city spend as much time trading as women in the villages? Do children in the cities live differently from those in the villages? How do you live without stores? How would having stores change people's lives? Does becoming modernized change the way people live? Does it slowly change people's values?"

Have the class look at the picture on page 236. Ask: "What is the mother doing? (She is probably pounding yams.) What is the daughter doing? Where are the son and father going? What do you think they are holding in their hands? (short-handled hoes) Are the people in the picture using anything they could not make themselves? Do you think villages in the rain forest need other villages? Are they self-sufficient?"

Now have the pupils look at the picture on page 237. Ask: "Do people in the picture have new machines and tools to help them prepare food? Do you think this picture was taken in the country or in a city? Would you prefer to shop in an open market or in a big modern store?" Tell the class that most Nigerians work from a young age. In the past it was a way of learning and of contributing to the village. Today, many families are poor and need all the money family members can bring in. Ask: "Do children in the United States have to be a certain age before they can work? Can Americans afford not to have their children work so young? Why do we have laws protecting children and saying when they can work? Do you think modernization will eventually change the age at which Nigerian children start working? Why?"



► Which schools would better prepare a person for city life—those in the north, or those in the south? Why?

But in the Agbas' village, the school taught other kinds of things. They taught reading and writing. They taught addition and multiplication. And John Agba learned these things quickly.

In time, the Agbas grew proud of John. John was a good student. They sent him to college in a city far from home. Later, he even went to Ireland. There he learned to be an engineer. It took him three years to become an engineer. At the end of the three years, John Agba settled in Lagos.

In Lagos, life is very different than in the village. Even the sounds John hears are different. In the rain forest, insects and birds chatter and scurry through the vines and trees. In the city, people and buses and cars make the noises.

Like his father and his uncles and his brothers, John Agba is married. But he has only one wife. There are many reasons for this. There is not much space in the city. There is too little space to have many wives, each with her own house. Also, like John Agba, his wife is educated. She teaches school. She would probably not like it if Mr. Agba had another wife. Village men may have more than one wife. But in the city, things are different.

Life is different in the city in other ways, too. The Agbas must buy all the things they need. They pay for their needs with money. In the village, food comes from the fields. And most clothes are sewn by the women.

City streets are busy. There are so many shops! Vegetables, pineapples, fried cakes, even dresses, are sold out on the streets.



Have the class read the feature on page 238. Ask: "How does the picture on this page show status? What status do you think the people shown have? Do you think the people in the picture are from northern or southern Nigeria? (northern) Do you think southern Nigeria has horses? Why is it difficult for horses to survive in southern Nigeria? Do you think these people might be chiefs? Do government workers and leaders in the United States parade through the streets like the people in the picture? Do they appear in public often? Why do you think leaders parade and remind people who they are and what their authority is? Do you think John Agba has any symbols of status? Do you know how people with high status live? Do you think people with some kind of high status would like to have some other kind of high status as well? Why, for example, do Yoruba successful in business, government, and education, also want to be chiefs?

In the United States, does the status of the wife depend on the status of the husband? Do children of rich parents have a higher status than children of poor parents?" Inform the class that in Nigeria, status is much more complicated than it is here. Ask: "Do Yoruba women often own their own businesses and become traders on their own? Do you think that in a system where the husband and wife go into business for themselves, the status of one depends on that of the other? Do you think each has his or her own status? Do you think that city life and industrialization will also change the way women gain status in Nigeria?"

Activities

1. Have the pupils create a pantomime of a village meeting. During the meeting the villagers decide to send one of their young men to a foreign country to be educated. Show the benefits the villagers expect to come to him, their village, and themselves as a result. Tell the class that many African dances use stock methods of characterization. A scholar, for example, may be shown turning the pages of a book, and a Hausa may be shown with a riding whip and a turban. Have the class think up similar movements for the people in their pantomime.



STATUS—FEELING IMPORTANT

The city has changed other ways of life, too. Back in the village, the most important people owned the most land. Leaders were selected only from families that had always been leaders. Sociologists call this sign of people's importance their **status** (stā'tēs).

Status depends on many things. In the United States, money is usually the most important sign of status. And, the longer a family has had lots of money, the higher its status is. Power is a sign of status, too. The President of the United States has a high status. He may or may not have much money.

Look at the following list. It tells about status in a Nigerian city. The sociologist who made the chart comes from Nigeria. To make the list, he interviewed many people and studied how they work and live.

STATUS—FROM HIGHEST TO LOWEST

1. People with a modern education and jobs in government and industry
2. Traditional rulers—including chiefs
3. White-collar workers, like people who work in offices and stores
4. Unskilled workers, like farmers who grow only their own food, and people who work without training.
5. People who do not work at all, but must depend on their relatives

Which group do you think Mr. Agba belongs to? Do you think it is an important group? Do you think Mr. Agba has a high status in Lagos? What kind of status do you think Mr. Agba's wife and children have? From what this chart says, how have industry and city life affected status?

Yet life is changing in the village, too. The villagers today sell crops for cash. They now buy some other foods that they do not grow.

Many people who come to the city to work go back home when they have earned enough. But John Agba and his wife plan to stay in Lagos. There is a great need for engineers in the city.

Sometimes, country relatives come to visit the city. They come to work or visit. Usually they stay with members of their own tribes. It is easier to stay with friends and relatives. Friends and relatives speak the same language. They eat the same food. In some parts of the city, groups live much as they did in the country—surrounded by many relatives.

Housing is crowded in Lagos. The government has tried to help. It has built modern apartment houses. But people do not like to live away from their aunts and uncles and cousins. They do not like to pay higher rents for government apartments. They do not like the distance from the apartments to the center of the city.

► Who do you think the people in the villages sell their food to?

► Pretend you are a newcomer to the city. Would you like to live in a new apartment, or with your relatives in an old, small house? Why?

1. What is the capital of Nigeria?
2. How are the schools of northern and southern Nigeria different? Which of the schools train the most people for jobs in industry and government?
3. How is John Agba's family different from his father's family?

4. What is status? Name three signs of status.
5. What buildings in John Agba's village would not have been there 100 years ago?
6. Do most Nigerians who go to work in the city want to stay there for a long time?

2. Tell the class to imagine they live in a small town in northern Africa. The inhabitants have just learned that the government is going to build a wide, paved road to their town and a new school. Have the pupils write a special newspaper feature. It should have townspeople's views about the new developments, information about what to expect and about changes that might result, and cartoons.

Answers (p. 239)

1. Lagos is the capital of Nigeria.
2. The schools of southern Nigeria teach modern subjects like mathematics, science, technical skills, and English. The northern schools teach some of these subjects, but they mainly teach children prayers from the Koran. The southern schools train the most people for jobs in industry and government.
3. John Agba's father was a farmer who could not write. He had several wives, each of whom lived in a separate house with her children. John Agba was educated in a foreign university. He lives in Lagos and only has one wife, who is a teacher.
4. Status is the position people hold in society. It depends on education, the kinds of jobs people have, and the wealth people have and how long they have had it.
5. John Agba's village has new buildings, such as a post office, a clinic, and a school.
6. Most Nigerians who go to work in the city do not want to stay there a long time. They want to earn enough on which to retire.

INVESTIGATING THE UNIT

Gathering Information

You have read that Nigeria had powerful kingdoms long ago. Find out about them from the library. As you read, ask yourself how the kingdoms became powerful. Were they near important trade routes? What goods went over these routes?

Grouping Information

While you are reading about Nigeria, find out about some of its peoples. Choose the three largest groups. Put each group's name on a separate piece of paper. On each piece of paper, list the people's language, the region where they live, their religion, the kinds of rulers they had, and the ways in which they used their land.

Compare the lists. Are the people alike? Do you think the differences would cause a problem in uniting the country? Explain.

What Does the Map Tell You?

Nigeria is in a part of Africa called West Africa. Look at a landform map of Africa. Find West Africa. Compare it to the rest of Africa. From what the map tells you and

from what you have read about Nigeria, describe how the lands of West Africa differ from the rest of the continent.

Using What You Have Learned

Make a model of how light enters a rain forest. Get a cardboard box, a cloth, and a flashlight. Cut away the top of the box and part of one side. Place the box on a table, top-side up. Drape the cloth over it. Next, cut a hole in the cloth where the hole in the side of the box is. Turn the light off in the room and shine the flashlight over the top of the cloth. Look through the hole. You are looking into a rain forest. Is the sunlight in the forest bright?

Comparing and Contrasting

Now cut a hole in the top of the cloth. The hole stands for a clearing the farmer has made for growing his crops. Flash the light over the box again. Does the sun shine brighter in the clearing? Do you think the soil dries quicker here than in the rest of the forest? Does rain fall harder here and wash away the soil?

UNIT 8

READING LESSON: WORK-STUDY READING— IDENTIFYING PROBLEMS

Purpose

One way to read a social studies chapter is to identify the problems faced by a country or group of people and discuss the solutions to these problems.

Introduction

Say: "All the people we have studied about so far this year have had problems to face. These problems had to do with growing crops, harnessing natural resources, living in a hostile environment.

"Today we are going to think about the problems faced by Brazil today. Some of these problems are being solved; however, sometimes new problems arise as a result of these solutions.

"The study guide I am passing out now will help us to read this section (pages 262–265) with attention to the problems Brazil faces and the solutions it has come up with."

Development

Use the following study guide as a background for a guided reading lesson. Pupils read a section silently, then the class discusses the answer to the motivating question, or as independent work, pupils read and work entirely on their own.

- A. Read "Not enough water to live," pages 262–263.
1. What two problems existed in the northeastern part of Brazil in 1970?
 2. What were the people doing to solve their problems?

- B. Read "Brasilia," page 265.

1. Brasilia was built because of a problem. What was that problem? (Inference required.)
2. Did the building of Brasilia solve that problem? In what way?

- C. Read "And now the Amazon," page 265.

1. The president decided on a solution to the problem. (Review A. 1) What was that solution?
2. In what way can we say the problem has been solved?

Application

Discussion should bring out the following generalizations as the answers to the questions:

A.

1. Northeastern Brazil suffered from lack of rainfall and from overcrowding.
2. People wanted to fight the government. Some people left northeastern Brazil for the big cities—only to find bigger problems in the slums of these cities.

B.

1. The center of Brazil was hard to reach. Few people lived there. Most Brazilians lived in the overcrowded cities along the coast.
2. Yes. Inland Brazil opened up. New towns sprang up and old ones became wealthy.

C.

1. President decided to build a road to connect the Amazon Valley—still unexplored—with the rest of the country. Here there was enough room for every poor person in the country.
2. About 75 percent of the settlers in the Amazon are from northeastern Brazil.

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READING LESSON PLANS

BRAZIL: LIFE ALONG THE AMAZON

Our old cities are crowded,
And too many of us are poor;
We must follow the River to new land,
Where we never built cities before.

Knowledge Objectives

Knowing that the Amazon River is the second-longest river in the world.

Understanding that the Amazon Valley, an unexplored frontier, contains the world's largest equatorial rain forest.

Knowing that the Amazon Valley is inhabited by many different groups of Indians, many of whom have never seen an outsider.

Understanding that the coming of the white man to Brazil resulted in the destruction of many Indians' way of life.

Knowing that the government of Brazil is building a highway across the country at the widest part.

Understanding that the cutting down of the rain forests will take away the last refuge of the Indians of Brazil.

Understanding why the government of Brazil wants to open up the Amazon Valley to settlement and industrial development.

Value Objectives

Appreciating the many hardships that settlers of the Amazon Valley have to endure.

Appreciating the way of life of the Indians of the rain forests.

Skills

Analyzing information about rain forests.

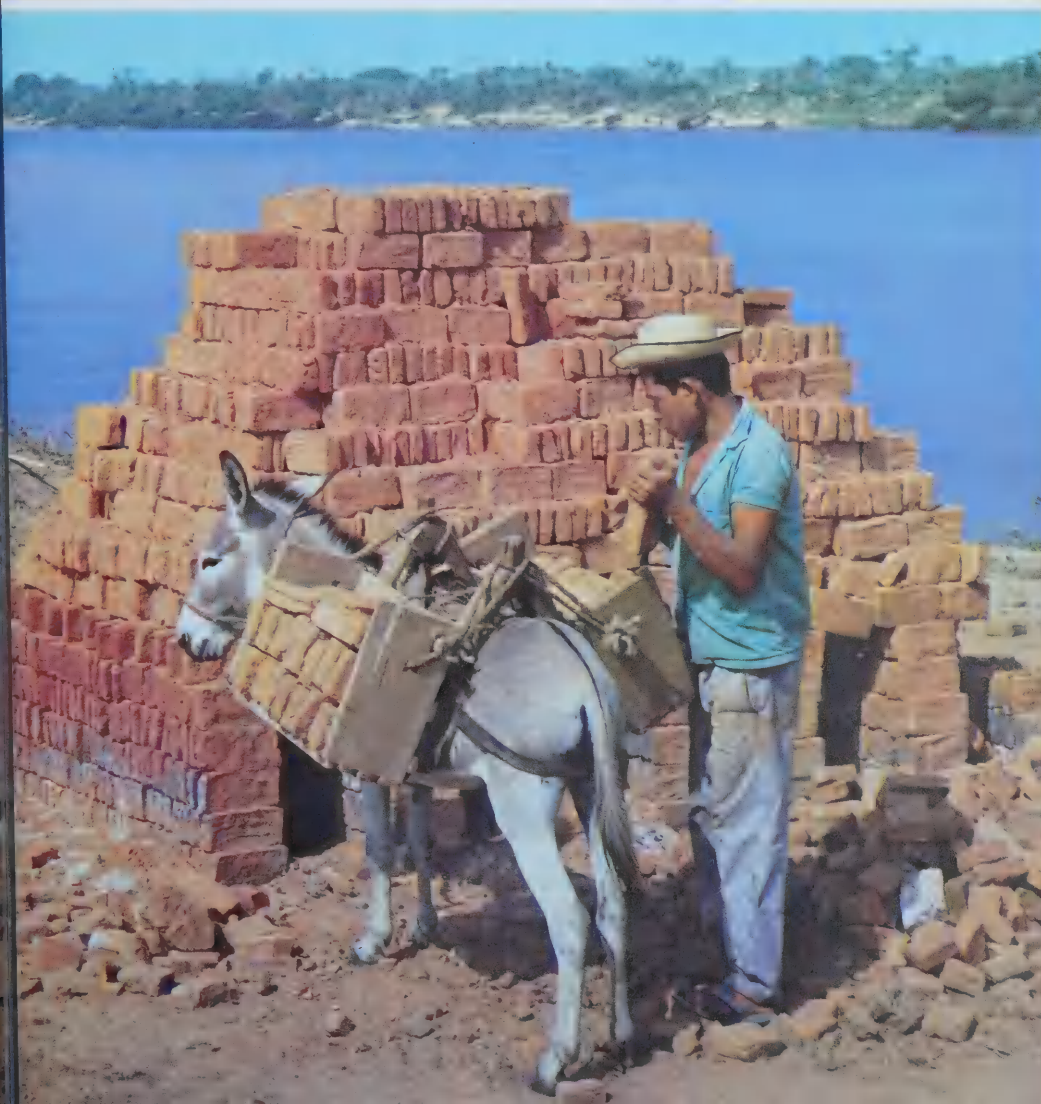
Drawing inferences about the Indians of the Amazon Valley.

Comparing and contrasting the life of the settlers with that of the Brazilian Indians.

Hypothesizing about the future of the Amazon Valley.

Reading population, land, and highway maps of Brazil.

Reading altitude and temperature diagrams.



LESSON 1 (pp. 242–248)

Lesson Objectives: Knowing that the Amazon River of Brazil is the second-longest river in the world. Knowing that the Amazon Valley has the world's largest equatorial rain forest.

Lesson Skills: reading maps, reading diagrams, "reading" pictures, observing, analyzing information, comparing and contrasting

Introduction

If any pupils have ever taken a boat ride on a river, have them recall it now. Ask: "What did you look at during the ride? Did you look at both shores? What did you see on the shores? What did you see on the shores? What was the color of the river? Was its water smooth or choppy?"

River and Rain Forest



In the north of Brazil, there is a great river called the Amazon. Find Brazil on the map on this page. Now trace the Amazon with your finger. Look at the many rivers that flow north and south from the Amazon.

Geographers call this whole area the Amazon Valley. The Amazon Valley is the largest area of Brazil. Yet few people live here. Why?

The Amazon is the second-longest river in the world. Only the Nile River in Egypt is longer. Some parts of the river are more than 40 miles wide. When there are heavy rains, the river becomes even wider.

◆ am' ə zän

◆ Geographers (jē og' rə- fərz) are scientists who study the earth and the way it is used.

◆ Do you live near a river? If so, find out how wide your river is at its widest point.



Lesson Development

Have the class read page 243 and page 244 up to "The Amazon Valley." Ask: "How wide is the Amazon at its wider parts? Do you think you can see both shores when the river is so wide? How wide is 40 miles?" Tell the pupils that 40 miles is about the length of 800 long city blocks. Have the pupils find out how long or wide their city is. Have them compare its width or length with the width of the Amazon River. Ask: "Can you imagine sailing on a river on which you cannot see one of the shores? Would you feel as if you were sailing on the sea?"

After the pupils finish tracing the route of the Amazon on the map on page 243, ask: "Which direction did you move your finger when you traced the river—to the right or to the left? Why did you move your finger in the direction you did? Do you think the river flows in that direction?" Tell the class that most rivers begin in springs or lakes in mountains. They usually flow toward the ocean or a large body of water. The Amazon River begins in the Andes Mountains in northern Peru. Ask: "Which direction should you have moved your finger in order to trace the direction in which the Amazon flows?"

Tell the pupils to look at the map again. Ask: "Do you think the Amazon flows very far before it empties into the Atlantic Ocean?" Tell the class that it flows 3,900 miles and is the second-longest river in the world. (The Nile, which is over 4,000 miles long, is the longest.) Have the class look at the picture on page 242. Ask:

"Does the Amazon look like a lazy river? Does its water look smooth or rough? What color is it?" Tell the pupils that the Amazon has many strong currents (streams of water that flow in one direction) because so many rivers flow into the Amazon. Sometimes there are huge waves at its mouth as the ocean waters rush inland. Also tell the class that the rivers that flow into the Amazon are different colors because of the soil or plants they carry. In many places you can see where the different colored waters meet.

Ask: "What is a tributary?" Have the pupils explain how tributaries "feed" water into the Amazon. Ask: "Why does the Amazon have so much water? Does its number of tributaries have anything to do with the amount of water?"

Tell the class to read the rest of page 244 and page 245. Ask: "What is a river valley?" (the land a river "drains"—or flows through) Tell the class that all the land the Amazon and its tributaries flow through is called its *drainage basin*. The drainage basin of the Amazon covers more than half of Brazil. It is this drainage basin that we call the Amazon Valley. Help the class find out how large the drainage basin, or valley, of the Amazon is. Provide the pupils with duplicated maps of Brazil. Have them draw in the Amazon River and its largest tributaries. Also have them shade in all of the area the Amazon and its tributaries flow through. Ask: "Is the Amazon Valley very large?" (Have the pupils save these maps for work later on.)

◆ trib' yə' ter ēz

► Can you name a common word with the letters *trib* in it? A tributary is a small river that *gives* water. What does your word mean?

► Do you think rain forest is a good name for this kind of land? Do you think it is easy to live in a rain forest?

But the Amazon is not only long and wide. It also has huge amounts of water. For instance, the Amazon contains 12 times as much water as the Mississippi River. This means that for every gallon of water in the Mississippi, there are 12 gallons of water in the Amazon.

More than 500 smaller rivers feed water into the Amazon. We call these smaller rivers **tributaries**. Some of these tributaries are as big as the entire Mississippi River. Only the biggest tributaries are shown on the map.

THE AMAZON VALLEY

The Amazon and its tributaries flow through a great valley. This great valley covers most of northern Brazil. What is it like in the Amazon Valley?

The rain forest The Amazon Valley is the largest area of woods in the world. There are miles and miles of tall trees, winding vines, and grass fields. Overhead, the strong sun beats down. Under the tall trees, though, the land is dark—even at noon. The trees grow so close together that the sun cannot shine through.

During the rainy season, it rains every day. Even during the dry season, it rains every few days. Most people call such a place the jungle. Scientists call it the **rain forest**.

Few people live in the rain forest. Yet it is very noisy there. Bugs and birds dart through the leaves of the trees and vines. Monkeys climb through the branches, screeching loud noises at each other.



Some people of the Amazon live on the water—in houses built on stilts.

Car horns and television sets make the city a noisy place. In the rain forest, the noise comes from living things. And, with each animal making its own sound, the rain forest is a very noisy place.

Climate Geographers call the weather of a place over a long period of time its **climate**. The climate in the rain forest is hot and wet. The rain forest is near the equator. The sun shines every day of the year. Sometimes heavy clouds gather, and rain pours down. But then the sun shines again.



Tell the class that during the rainy season (from about April to October), the Amazon rises and floods the land right along the shore. This land that becomes flooded is called a *floodplain*. Ask: "What do you think a 'drowned forest' is?" Point out that the floodplain of the Amazon is good land for growing crops. The reason is that every year, the river leaves behind new, rich soil when its waters go down. Ask: "Do you think that many of the people who live in the Amazon Valley live along the Amazon's shores?"

Have the pupils look at the pictures on page 245. Ask: "Where in the Amazon Valley do these people live? Why do you think they did not move far inland? How would they travel inland? Is it easier to travel by river than by foot? Would it be easier to clear the land on the edge of the river and build a house there than to clear land far away from the river? Does the picture on page 267 give you part of the answer to this question? What does it tell you? Do you think that the kinds of plants growing along the Amazon's shores are different from the kinds that grow farther back in the rain forest?"

Ask: "Why are the houses shown on page 245 built on stilts? Are houses with stilts better for places that flood than houses with cellars? How have people who built the houses in the picture used their environment to live? What are the houses made of? Do people who live in such houses have to own boats? Why? Do you think the people who live in these houses are rich?"

Help the pupils figure out why the lands around the equator are so hot and why they do not have four seasons. Have the class obtain ■ large ball, put it on a stand, and have it represent the sun. Also find a globe. Point out to the pupils that the earth is tilted on an angle. Attach pipe cleaners or sticks perpendicular to the poles, so the pupils can "see" the tilt of the earth's axis. Move the globe around the ball to represent the earth's orbit around the sun. Tell the class that as the earth moves around the sun, it spins on its axis. (Make sure the axis always points in the same direction—the upper part pointing to the right.) Ask: "Can you figure out how day and night come about? How long does it take for the earth to spin completely around on its axis?" (24 hours) Move the earth around the sun again. Tell the pupils that the left side of the sun's orbit is winter and the right side is summer. Turn the globe so that North America faces the sun. Move the globe around the sun, asking as you turn it: "Does North America tilt toward the sun in summer? Does it tilt away from the sun in winter? Does North America tilt either toward or away from the sun in spring and fall? Does Brazil tilt toward or away from the sun at any time?"

Ask: "Which part of the globe is directly facing the sun? (the equator) Would the part of the earth that gets direct sun rays be the hottest part of the earth? Does the equator always directly face the sun? Why don't the lands around the equator have hot and cold seasons?"

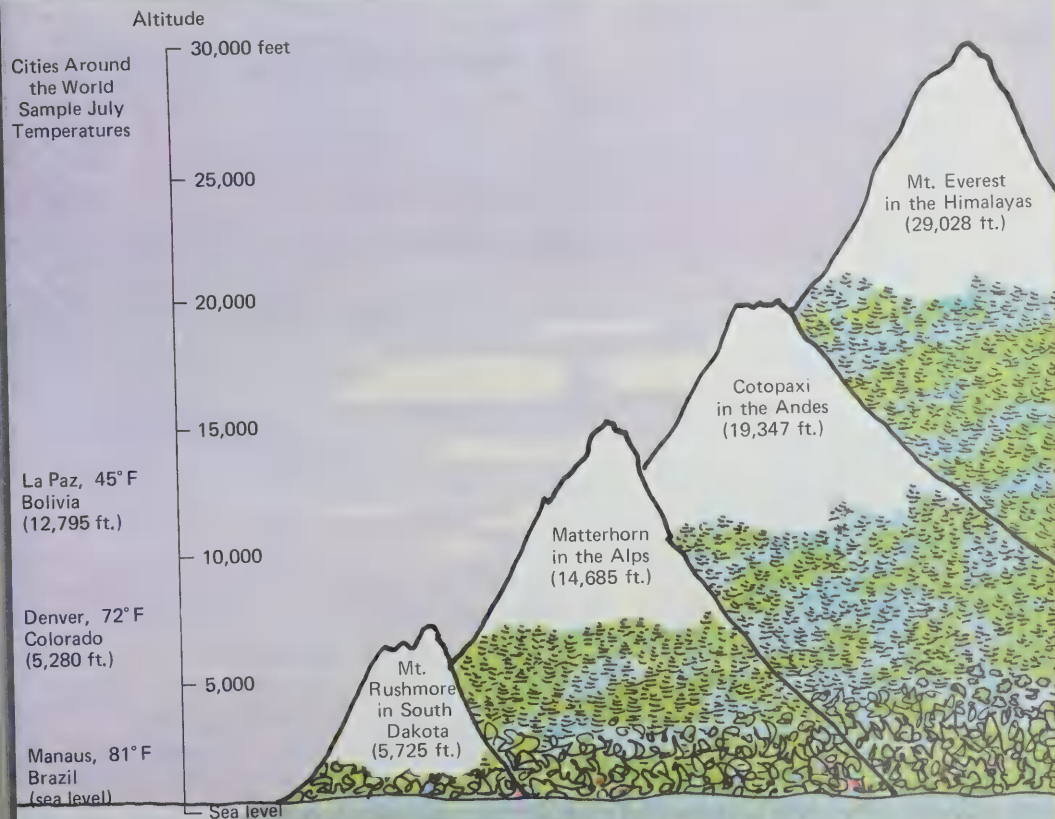


There are few large animals in the rain forests of Brazil. The jaguar shown at the bottom of the page is one of the exceptions. The forests do have large numbers of snakes, insects, monkeys, and wild pigs. They also have many kinds of birds. The forests provide food and places for birds to build their nests. What will happen to these animals if the forests are cut down?



Do you live near a high mountain? If so, what is it like on top of your mountain? Is there snow? Is there snow all year around?

Geographers call the height of a place its **altitude**. Altitude means height above sea level. Sea level means the average height of



Tell the class that the sun's rays hit the equatorial lands and heat up the air over them. The air that is near the land is hot, but it cools as it rises to higher altitudes. Ask: "Do you think that any place on the equator has a cool climate? Are there any high mountains near the equator?" Have the pupils look at the diagram on page 247. Tell them to find La Paz on the diagram. Ask: "What is the temperature of La Paz in July? Is the city at a high altitude?" Have the pupils find La Paz on a map of South America. Ask: "Is La Paz near the equator? Why isn't the temperature of La Paz higher?" Next, have the class find Manaus on the diagram. Ask: "At what altitude is Manaus?" Have the pupils find Manaus on the map on page 243. Ask: "Why is Manaus so much hotter than La Paz? Is the Amazon Valley mostly lowland? Why is the climate of the Amazon Valley hot and humid—or tropical?"

Instruct the pupils to read page 248. Have them explain in their own words why tall trees can grow in the rain forest lands when crops cannot grow well there for long. Ask: "Is any part of the Amazon Valley good for growing crops? (the floodplain) Should people cut down the rain forest? Will crops be able to grow in much of its land?"

Have the pupils look at the pictures on page 246. Ask: "Do all of the pictures look as if they are were taken in the rain forest? Look at each picture and tell me what kind of land you think the picture shows. What does this tell you about the Amazon Valley? Do you think part of the land is dry?" Tell the class that the Amazon Valley has different kinds of land in it. It is not all flat; part of it is hilly and dry.

Activities

1. Have the class prepare a bulletin-board display of the animals and plants of the Amazon. Divide the class into five groups—one each for fish, birds, land animals, trees, and plants and flowers. Have the pupils find either pictures or books they can copy the pictures from.

2. Tell the pupils to write a few paragraphs describing a walk through the rain forest. Encourage the pupils to use their imagination in describing what they see and hear and how the weather affects them.

3. Have the pupils look at the pictures on page 245. Tell the pupils to keep these pictures in mind as they imagine the following episode: A child who lives in a floating city visits a big city of Brazil and buys a raffle ticket. The child wins a new car. Let each pupil write a letter to the raffle committee explaining why he will or will not accept the car. Have pupils who turn the prize down explain why they want to sell the car and what they hope to do with the money.

► There are five oceans in the world. Can you name them?

► What does the word *valley* mean?

► What other things, besides minerals, do plants need to grow?

the water in the oceans. The higher the altitude of a place, the cooler it is. That is why there is always snow in a place like the Rocky Mountains. Even mountaintops at the equator often have snow on them. The equator is an imaginary line that divides the earth into a northern part and a southern part. It is usually very hot at the equator. The mouth of the Amazon River is on the equator.

And the Amazon Valley has a low altitude. Even under the shade of the trees, it is hot and steamy.

Growing things The rain forest is covered with growing things. The plants are thick and crowded together. But it is very hard to farm in the rain forest. How can this be? Why can giant trees and long vines grow in the rain forest while corn and wheat cannot?

Every day the rains pour into the earth. They wash its minerals deep into the soil. Food crops need these minerals, but their roots do not grow deep enough. Giant trees, on the other hand, have very deep roots. Vines and ferns can grow in the rain forest because they do not need many minerals.

Sometimes farmers clear the trees and vines. Then there are no plants to absorb the rainwater. The earth turns into mud. The hot sun dries the mud into hard earth. In the hard, sun-dried earth, air cannot reach the roots of the crops. Important minerals do not reach the crops, either. Without enough air or minerals, the crops do not do well. In time, the farms are gone.



The Brazil nut tree is one of the tall trees of the Amazon forests. It has a large fruit, which contains 12 to 30 seeds. These seeds are what we call Brazil nuts. Workers collect the fruits and take them to a place where the nuts are taken from the fruit. The nuts are then shipped to large ports, such as Belém and Manaus.

THE FRONTIER

Once, most North Americans lived along the east coast. There were few people along the west coast. The people on the west coast were mostly American Indians who had been there for thousands of years.

A land of new opportunities Many Americans thought of the west coast as the **frontier**. They thought of the West as the land of the future.

◆ A frontier (frən tīr') is an unexplored place.

Lesson Objectives: Knowing that the Amazon Valley is an unexplored frontier. Knowing that the Amazon is populated by Indian tribes, many of whom have never seen an outsider.

Lesson Skills: inferring, analyzing information, comparing and contrasting

Introduction

Ask the class if anyone has seen any movies or read any books about the American frontier. Ask: "How was the frontier shown? What was life like on the frontier? Do you know why people moved to the frontier? Was life on the frontier hard? Did other people besides settlers live on the frontier? Who were they? Do you think all frontiers are alike? Must settlers in different parts of the world face different problems with their land? Must all settlers face hardships? Why?" Tell the class that the Amazon Valley is Brazil's frontier.

Lesson Development

Have the class read pages 249, 250, and the first part of page 251. Ask: "Who did the American settlers meet as they traveled to the frontier? Did the Indians and the settlers get along together? Did the settlers and the Indians have the same way of life? Do you think the Brazilians who are now moving into the Amazon Valley have the same way of life as the Indians who have lived there for a long time?"

Tell the class that the Indians of South America are related to the Indians of North America. Sometime between 25,000 and 10,000 years ago, the ancestors of the American Indians came to Alaska across

the Bering Strait, which was land covered with ice. They traveled throughout North and South America, hunting for food. In time, these Indians developed different languages and ways of living. The Indians who settled the Amazon region lived in small villages. A few were nomads—people who moved from place to place looking for animals and wild plants to eat. Ask: “Why do you think the Indians of the Amazon lived in small villages? Was it easy to build cities and large farms in the rain forest?”

Tell the class that the Indians of the rain forest practiced a form of agriculture called slash-and-burn agriculture. They cut down the large trees and then burned that section of the forest. The Indians then planted crops there for a few years, until the soil was worn out. Then they moved and cut down another area of the forest until its land was worn out also. The forest grew up again on that land. The Indians lived this way for hundreds of years.

Tell the class that when the white men came, some of the Indian tribes now in the rain forests lived along the coasts. Ask: “Why do you think the Indians moved inland? Why don't people today know more about the Indians of the Amazon? Is it easy to travel through the rain forest? Would you take the chance of becoming lost in the forest, if many of the people who live there were unfriendly? What do you know about the size of the Amazon Valley that tells you this would be a difficult place to explore? Why would exploration of the valley take a long time? Could you take an airplane into the jungle? What would have to be built before the airplane could land?”

► Can you name some of the things that are made from wood?

► Anthropologists (anth' rɒ-pəl' ə-jists) are scientists who study people and how they live.

The Xicrin Indians are like many Indians of the Amazon rain forests. They rarely see outsiders. Although some Indians were once fierce warriors, most of them today are no longer warlike. They farm, hunt, and fish for a living. They stay to themselves and try to keep as many of their old ways as possible.

They thought of the West as a place that would always offer them new lands and new opportunities.

To Brazilians, the Amazon Valley is a kind of frontier, too. Even though farming is hard, the Amazon is full of riches. Fine woods can be taken from the trees. There are valuable minerals in parts of the Amazon Valley. There is even some gold. Someday, perhaps, many people will live in the Amazon Valley. Already, giant highways are being built. Cities are growing up. When people settle in the valley today, they bring modern things with them, like television sets, canned foods, cars, and books. Life in the valley is changing.

But some people still live in the Amazon Valley the way they have always lived. These are the Indians of the Amazon. Anthropologists think that there are fewer than 25,000 Indians left in the region. No one knows for sure. Indian villages are far apart. Scientists and the Brazilian government do not really have the



money and time to seek out every village. Furthermore, sometimes modern Brazilians have killed the Indians of the Amazon. So the Indians are not always friendly to visitors. They prefer to keep away from all strangers.

LIFE WITH THE TUPI

One group of Amazon Indians is the Tupi. The Tupi are made up of many different tribes. Anthropologists have studied the Tupi, but no one knows what each group is like. One group was studied by a French anthropologist. The next few paragraphs about the Tupi Indians were written by him. As you read, ask yourself how the people live. Do you think their way of life is hard or easy? Do you think their way of life will change as Indians meet more people from the outside world? See if you can find ways in which Indian life has already changed.

The people lived in a village, deep in the forest. There were 16 people in the village. One of the villagers led us (the anthropologist and his companions) along the route through the jungle. As we walked, the Indian man removed leaves from poles made of bamboo. We saw that the poles had been sharpened to razor-fine points. The points were hidden by the leaves.

The village had four houses. Two were lived in and two were storehouses. On the outside of the houses there were red and black paintings. The paintings were of people and fish and dogs and other things with which the Indians were familiar.

◆ tũ'pê

◆ Do you think this Tupi village was afraid of enemies? Do you think the sharp bamboo poles were a good idea?

◆ When you paint pictures, do you use the things around you as models?

Have the pupils read the rest of page 251 and page 252. Ask the class if anyone knows how the Amazon got its name. Tell them that the early European explorers of the Amazon said they were attacked by "tall women warriors" wearing grass skirts and with long black hair. The explorers called these warriors "Amazons," after the women warriors described in ancient Greek stories. Today, scholars think that the explorers were attacked by a group of Indians who had a few women with them, or that the "women warriors" were really men. The reason scholars think this is that Indian men have long hair and often wear grass skirts. In time, the entire region was named after the Amazons.

Inform the pupils that at the time of exploration, there were probably 1 to 1½ million Indians in Brazil, and most of them lived along the coast.

Ask: "Are Tupi villages large or small? Why do you think the Indians written about here wanted their poles free of leaves as they moved along the jungle? Do you think these Indians lived near a river or a lake? Why did the people paint fish on their houses?" Tell the class that many Tupi Indians live in a longhouse in which as many as 100 people could live together.

Inform the pupils that manioc is a basic and important food, but it has to be prepared properly because its juice is poisonous. Indians wash the manioc root and then grate it or cut it into small pieces. They squeeze out all of the poisonous juice and dry the pulp that is left. This pulp is ground into a flour, which is then roasted. Manioc is eaten dry or mixed with water and gravy. What is not used is stored. Ask: "Why is it hard to grow a large surplus of foods in the rain forest? Why don't the Tupi build cities? Why don't they get together and form large groups? Do they need to cooperate in order to live? Do the Tupi live as well in small groups as they might in a large group?"

Have the class read page 253 and the first part of 254. Ask: "What kind of leaders did this Tupi village have? Did it have a government? Did it need a government?" Tell the class that the Amazon tribes never came together as one people. They never chose one man to be chief over all the people in one particular tribe. Ask: "Would it be easier to fight and conquer people who do not know how to get together and form a large army? Is it easier to defeat such people than people who are used to cooperating?"

Ask: "What kind of feasts do you think the Tupi celebrate? Do they celebrate July 4, Christmas, or Thanksgiving? Do you think that they would celebrate a harvest holiday similar to Thanksgiving? Would the Tupi celebrate a successful raid on an enemy group? Would they celebrate the picking of a new chief or the feast day of a favorite god? Do you think the Tupi are religious people?"

◆ A mortar (môr'tər) is a bowl of very hard material in which substances can be pounded to a powder.

◆ A pestle (pes'l) is a tool used for pounding foods like manioc (man' ē-äk), a tropical plant whose thick roots are nutritious.

► Do you think these Tupi Indians had an advanced way of making tools?

Inside the houses, there were hammocks woven of cotton thread.

There were also earthen pots and basins. Each house had a mortar and pestle for grinding corn and manioc. Besides corn and manioc, the villagers ate beans and peppers.

Every house had bows and arrows for the men to hunt with. There were different kinds of arrows. Some were bamboo arrows which had been sharpened for hunting. Some had jagged edges like a saw. These were used for fighting.

There were also musical instruments. Many were played like a flute. The villagers would make them by cutting holes in sticks of bamboo. Blowing through the end of the hollow stick and fingering over the holes produced music.



The hammock, which is popular in Brazil, was invented by the Indians.



The chief and his people Like most anthropologists, the one who wrote this lived with the people he was studying. Because he was an honored guest, he lived with the chief of the village and his four wives.

The head wife went from place to place with her husband. She also helped him to receive visitors. The other wives cooked and took care of the house and took care of the children. In fact, children seemed to have many mothers.

One of the chief's duties was to organize feasts. At the feasts, people danced and sang and played the bamboo pipes. The strongest men would compete to see who could carry a flute player on his shoulders the longest.

Sometimes the people of the village were divided into two teams. Each team would roll

Tell the class that the Tupi and other Indians of South America believe in many gods and some great heroes of long ago. For example, they believe in a set of twins who were very brave but also very mischievous. According to some tribes, these twins became suspicious of an agouti (ə güt' ē—a kind of rodent) who was getting fatter and fatter. They watched him and found that he had discovered the tree of life, which had many kinds of plants in its branches. The twins wanted this tree and decided to pull it up. The agouti warned them that if they pulled up the tree, they would cause a great flood. They did not believe him and pulled up the tree. Sure enough, there was a flood, and all of the plants in the branches of the tree spread all over the earth. Ask: "Does this story try to explain anything about the Amazon and its rain forest?"

Tell the class that some Indians of the Amazon believe that a god controls thunder. Others believe that thunder is caused by the beating of the wings of magical birds as they fly for shelter during a storm. Ask: "Do you think the Tupi have many stories involving birds? Does the Amazon have many birds?" Also tell the pupils that among the forest spirits the Indians believe in is a "Father of Monkeys" and a "Father of Alligators." They believe that these spirits let their "children"—that is, monkeys and alligators—be killed by Indians for food in time of need. However, these spirits punish any Indian who kills animals for pleasure or without reason. Ask: "Do you think the Indians of the Amazon feel close to nature? Do they respect the animals of the forest?"

Ask: "What furniture do the Tupi houses have? Do the Tupi seem to 'own' many things? Do you think they trade a lot? How do they travel from place to place? Do they ride? How do you think the dogs help the Tupi?"

Activities

1. Ask each pupil to draw a picture of the Tupi village the class has just read about, or of the inside of one of the Tupi houses.
2. Have the pupils make lists of any specialists that they think the Tupis may have.
3. Have each pupil select an animal of the Amazon Valley that he or she might like to have as a pet. Tell the pupils to pretend they are Tupi children, and write short stories telling about themselves and their pets. The stories should tell about some of their adventures in the rain forest. Encourage the pupils to use their imagination and to include any appropriate myths.



The white man introduced cattle to Brazil. What kinds of jobs could Indians do on cattle ranches?



part of a tree trunk toward the other; then the men would try to shoot arrows into the wood.

After this, the men would play target practice. They would shoot their arrows into a small doll made of straw. They believed it would bring bad luck to make a doll of wood.

THE WHITE MAN COMES

There were many Tupi Indians long ago. No one knows exactly how many. But then white men came to Brazil from Europe. At first, they

tried to enslave the Indians. The white men had guns. The Indians had only bows and arrows.

But the Indians knew the forest better than the newcomers. They moved back into the rain forest. But the white men had brought something stronger than guns with them—they brought strange diseases. When people catch diseases that they have never before known, they often suffer severely from them. The Tupi Indians began to catch diseases like measles and chicken pox. Whole villages were sometimes destroyed.

A new product—a new hardship About a hundred years ago, the Indians of the Amazon Valley faced a new threat from the white man. The white man needed a product of the Amazon. The product was rubber. People bought huge areas of land, without even seeing them. Then they rushed to the jungle to see if their land contained rubber trees. If there was rubber, there was wealth.

But the white men needed the Indians to work on their land. They raided Indian villages and carried off the people to work in the rain forest and in the cities. The plantations of the Amazon were located along rivers. An armed guard stayed at the river to make sure that Indians could not escape.

In the rain forest, each man was responsible for 150 to 200 trees. He would tap them and bring the rubber to a central collection point.

In the cities, where plantation owners lived, there was a lot of money. Opera companies

► Which do you think was stronger?

◆ Plantations (plan tā' shēnz) are large farms on which crops are grown for money.

Lesson Objectives: Understanding that the coming of the white man to Brazil resulted in the destruction of most Indians' way of life. Knowing why white men explored the Amazon Valley and why some even settled there.

Lesson Skills: "reading" pictures, observing, analyzing information, inferring

Introduction

Have the pupils read the rest of page 254 and pages 255 and 257.

Tell the class that Brazil was explored by the Portuguese. Ask: "Do you know which people explored most of South America?" Have the pupils find Spain and Portugal on a world map. Tell the pupils that these two countries competed with each other for rights over the "new" lands of the world. Finally, in 1494, Spain and Portugal decided they would divide the lands between themselves. They drew an imaginary line called the Line of Demarcation. Portugal was to have the new land to the east of that line. Spain was to have the land to the west. Portugal named its new land after a red dyewood called brazilwood, which grew there. At first, the Portuguese were not interested in Brazil. Only a few explorers looking for gold and jewels went there.

Lesson Development

Tell the class that one of the things the explorers found was that the Indians used "white tears from a weeping wood." They spread it on their feet and let it dry to form waterproof shoes. Ask: "What do you think the Indians were using on their feet?" (rubber)

They also made bottles and bouncing balls of rubber. The explorers took some of this back to Europe to have it tested. Scientists were soon trying to find ways to make rubber more usable. The problem was that it became soft and sticky in summer and so hard and stiff in winter that it cracked. Finally, in 1839, Charles Goodyear, an American, found a way to make rubber usable in different kinds of weather. He also made it stronger: He discovered a way of heating rubber, which he called *vulcanization*, after Vulcan, the Roman god of fire. Ask: "What do you think of when the name Goodyear is mentioned?"

Ask: "What did the European discovery of rubber do to the Amazon Valley? Do you think that Indians who were used to their freedom and hunting and moving about wanted to stay on rubber plantations and watch trees? Why did the Portuguese begin to bring in slave labor from Africa?"

Tell the class that Manaus became the center of the Amazon rubber industry. Have the pupils find Manaus on the map on page 243. Tell them to turn to page 264 and look at the pictures there. Ask the class: "What do you think happened to Manaus after people began planting rubber plantations in Asia?" Tell the class to look at the pictures on page 256. Ask: "How is rubber collected? What do people on rubber plantations have to do in order to get latex? Why does the rubber have to be taken to factories? Do people use as much rubber today as they used to? Have scientists found a way of making materials like rubber—that is, can they make synthetic rubber?"



Rubber is made from latex, the milky liquid that oozes from the rubber tree when it is cut. At factories, the latex is washed, hardened, or smoked. This crude rubber is then sold to factories around the world which make the rubber products you use.



came from Europe to entertain the people. But in the rain forest, the Indians worked and suffered.

Rubber in Asia But the rubber riches of Brazil did not last. An Englishman smuggled some rubber seeds out of Brazil. With the rubber seeds, the English started rubber plantations in the wet areas of Asia—on the other side of the world.

In the Amazon, there were many kinds of trees, and workers had to walk through all the growing plants.

The Asian rubber plantations were easier to plant and tend. On these plantations, only rubber trees grew. The trees were lined up next to each other, and collecting the rubber was much easier.

The rubber industry in Brazil grew smaller. The Indian villagers went back into their rain forest villages. But there were fewer of them now than ever. Some had died of disease. Some had been shot or poisoned. A few had married outsiders and gone to work in the cities or in the farm country of Brazil.

-
1. In what continent is Brazil located? Is Brazil near the equator?
 2. What is the name of the largest river in Brazil?
 3. What is altitude?
 4. Why is the Amazon Valley thought of as a frontier?
 5. Who are the Tupi Indians? Do the Tupi live in large villages? Do they make what they use?
 6. What was the first product the white man took from the Amazon? Why did the industry built around this product die?

Activity

Have the pupils look in books, magazines, and newspapers and find as many pictures as they can of things made from rubber. Have the pupils make a bulletin-board display that shows the importance of rubber products today.

Answers (p. 257)

1. Brazil is located on the eastern coast of South America. The equator runs across Brazil at about where the mouth of the Amazon River is.
2. The largest river in Brazil, and the second-largest in the world, is the Amazon River.
3. Altitude is the height of something above sea level.
4. The Amazon Valley is thought of as a frontier because it is an untamed land. It is filled with forests that have never been cut down. Even today, most of the valley has not been explored, and no one knows how many people live there.
5. The Tupi Indians are people who speak a form of the Tupi language. Explorers found them in Brazil, living in small villages in the rain forest or along the shores of the Amazon and its tributaries.
6. The first product of the Amazon that the white man made much use of was rubber. The rubber industry of Brazil died after people found it was easier to cultivate rubber in other places that were less thickly forested. In Brazil wild rubber trees did not grow close together in stands but grew mixed in among many other kinds of trees and plants. Also, scientists found ways of making synthetic rubber, which lessened the demand for natural rubber.

LESSON 4 (pp. 258–261)

Lesson Objectives: Knowing that the government of Brazil is building a highway across the Amazon Valley at the widest part of the country.

Lesson Skills: reading maps, analyzing information, observing, comparing and contrasting

Introduction

Tell the pupils to imagine they are moving to a new house their parents have built in the middle of a large forest. No one has ever lived there before or cleared the trees from the land. Not only is the forest dense, but it has many rough rivers running through it. Ask: "Will your family need a way to get to your new house? Will they need roads? Would they prefer a dirt road or a paved road? Why would they want a paved road if they could afford one? How would you build roads over the rivers? What kinds of specialists will your family have to hire to have adequate transportation routes?"

The Amazon and the Highway



Every day the sound of road-building machines are heard deeper and deeper in the rain forest. The noise of birds and bugs and crickets is drowned out by these machines that cut down trees and flatten out the earth.

People shout to each other. But they shout in Portuguese—not in the native Indian languages. The people are engineers and bulldozer drivers. Their shouts are mixed with the noise of airplanes overhead that drop food to the people on the ground. The people are building a road across the Amazon. It is called the Trans-Amazon Highway. It will cross the Amazon and connect Brazil with Peru. Find the path of the highway on the map on page 260. Find Peru.

HIGHWAY LIFE

Building a highway across the rain forest is hard work. The workers have to be brought long distances to the rain forest. The government offers them free land and high wages. But often they must leave their homes and families. And the work is hard. The workers must cut down trees and destroy the thick vines and plants that grow between the trees. In the Amazon, the “small plants” that grow between trees are sometimes 20 feet tall.

The longest way When it is finally built, the highway will be the longest in the world. It will stretch almost 3,500 miles. That is more than the automobile route from New York to San Francisco.

◆ Portuguese (pôr' chə gēz') is the language spoken in Brazilian cities.

◆ Why do you think the government has to offer so much land and money to attract workers to the rain forest?

Lesson Development

Instruct the pupils to read pages 259–260. Tell the class that the Trans-Amazon Highway will connect with a highway in Peru. The Peruvian road goes to the Pacific coast. Ask: “Do people in the United States usually travel cross-country by car? Is it faster to travel by plane or train? Why is it necessary to have roads and highways if we have planes and trains? Can people get to stores without roads? Can they open businesses without roads? How can people get to work without roads? How did people in the Amazon Valley travel through the region before roads were built there? Why do settlers need more kinds of transportation routes than just the river?”

Ask: “Why does the government have to bring in engineers, bulldozer drivers, and loggers from long distances? Why do most foods and other goods have to be airlifted? Why do married people leave their families to work so far away and under such difficult conditions? Do you think many of the workers are poor?”

Tell the class that about 11,000 men have left their families to work on the Trans-Amazon Highway. They earn about \$30 a month and work 12 hours a day, seven days a week. Not only must they work hard with little rest, but they must also fight the rain, insects, and snakes.

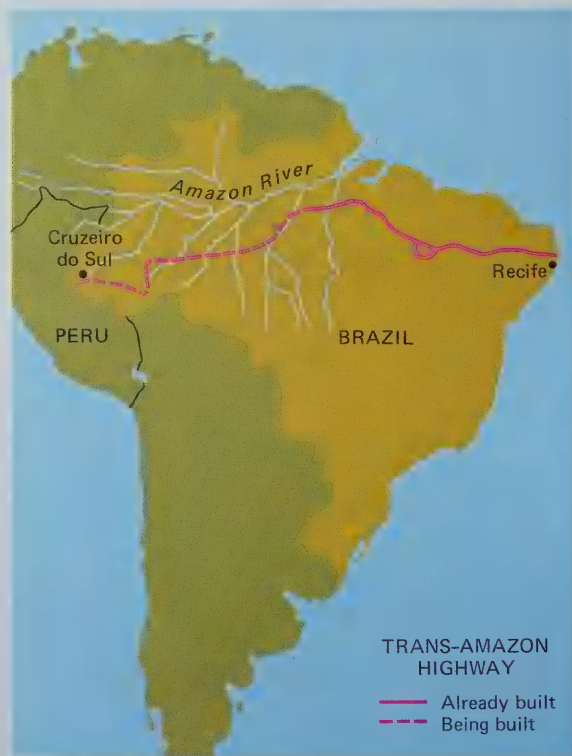
Ask: "Do you think the engineers who are planning the highway can examine and measure the land from a distance? Can they survey the forest land?" Inform the pupils that the engineers whose job it is to study the land usually travel to the new area by canoe. They have to cut their way inland, hacking away at the jungle every step of the way. There, they move about in a greenish, phosphorescent light over ground spongy from decaying leaves. When they have decided where the road will go, teams of cutters cut down the large trees. After the men have cleared a little space, huge bulldozers that have been floated downriver on rafts push their way inland. At first the workmen sleep on hammocks between the trees and under mosquito nets. The construction company puts up a permanent camp as soon as it can. The company promises the government to build the camp in such a way that it can later become a pioneer settlement center with schools, health stations, stores, communication centers, electricity, water, lumberyards, warehouses, gas stations, and so on. Ask: "Is this a good way of using resources and not letting things go to waste?"

Have the pupils read page 261 and do the map exercise on the page. Have the pupils find the part of Brazil that forms the frontier. Ask: "Can the phrase 'Go West, Young Man,' which was used in the United States at one time, be used by Brazilians? Where would people in Brazil have to go to get away from crowded areas? Do you think that the government will have to build roads leading north and south of the Trans-Amazon Highway also? Why?"

► Look at the map below. How much of the highway has been finished?

Now the road is only a dirt highway that runs deep into the rain forest. And usually the dirt highway is nothing more than a mud highway. Some day, though, Brazilians hope the highway will be paved. Then people will be able to cross the Amazon Valley even in the rain.

Now life is hard along the highway. Workers hack through the plants. Then trucks with special saws cut down trees. Food is brought in with planes. In the workers' camps out in the rain forest, there are no movies or television or restaurants.





But why? Why is Brazil building this giant road? Why would a nation want to cut through the thick jungle? Part of the reason is the number of people in Brazil. Look at the map on the following page. Which are the most crowded areas of Brazil? Do many people live in the region of the Amazon? Why do you think that might be?

There are many people living in Brazil. Because there is little developed land, the government is trying to open up new regions. The Amazon Valley is one of these.

Newcomers to the Amazon Valley have to bring in most of what they need from outside. The valley does have some materials that settlers can use, though. Look at the two pictures on this page. What resources does the Amazon Valley have that settlers can use for building?



Have the pupils look at the map on page 262 again. Ask: "About how much of Brazil has only a few people living in it? What does it mean to have a united country? Are all of the people of Brazil united? Do you think news travels quickly from one part of the country to another? Is it easier for people to feel united with people in other parts of the country if they know what is happening there? if they feel that other people in the country are in sympathy with them in times of trouble? What are some of the things that make a country strong?"

Activities

1. Have the class find out about the different materials used to build roads and highways. Have the pupils discuss what they think would be the best materials to use for the Trans-Amazon Highway. Have them figure out, for example, why tar roads would be bad for the tropical Amazon climate.
2. Have the class write a family scene in which the father of the family announces that he has saved up enough money to open up a small business. Have the pupils enact a scene in which the family decides that the best place to open its business will be along the Trans-Amazon Highway. Have the family members discuss which business will make the most money for them.

LESSON 5 (pp. 262–271)

Lesson Objectives: Understanding that the government of Brazil hopes that the Trans-Amazon Highway will open up the Amazon Valley to settlement and industrial development. Appreciating the hardships the settlers have to endure. Understanding that the cutting down of the rain forests will take away the last refuge of the Indians of Brazil.

Lesson Skills: “reading” pictures, inferring, figuring out percentages

Introduction

Tell the class to think back to what they know about the soil of the rain forest. Ask: “Is the soil there good for farming? Why move so many people to the Amazon Valley if the soil is not very good? Can the soil be used for other things—like for growing grass for cattle? Can other resources of the Amazon be used more efficiently and more easily if the rain forest is cut down? Can people do anything to prevent the river from flooding?” (They can build reservoirs and dams.)



■ Look at the map above. Do many people live along the western boundary of Brazil? in central Brazil?

NEED FOR THE HIGHWAY

People have been thinking and talking about building a highway through the Amazon Valley for some time. In 1970, something happened to bring it into being.

Not enough water to live In 1970, the president of Brazil visited the northeastern part of Brazil. This is a dry area with little rainfall.

It has too many people—most of them poor—living there. When the president visited northeastern Brazil, it was suffering from lack of rain. It had been suffering for some time.

The president was shocked at the poverty and misery of the people. They were thin and sick and angry. Some wanted to fight the government. Others were leaving the area. They went to big cities like Rio de Janeiro. There, they added to the already overcrowded hillside slums of the big cities. The people became even more crowded together. These city slums are not at all like the countryside or rain forest, where houses are far apart.

◆ rē'ō dā zhēner'ō

◆ A slum is a place where poor people live crowded together in houses that are poorly built or falling apart.



Lesson Development

Have the pupils read pages 262–263. Tell the class that the northeast—one of the poorest areas in Brazil—is very dry. Explain that this area often suffers from droughts—a time when there is not enough water for crops or for people and cattle to drink. The grass dies, and so there is no food for animals either. Many people go hungry, and some die of starvation. The rivers of this region dry up when there is no rain, because they are very shallow. The northeast does not have forests, but has small bushes, cactuses, and thorny plants. This area grows some cotton and fibers for rope, and people grow their own food in small vegetable gardens. Every year many of its people leave their homes to work on farms along the coast. The number of people who leave depends on the amount of rainfall that year. Ask: “To what other parts of the country do people of the northeast go during dry times? What can the government do to find work for them? How can it give them new homes and enough food to eat?”

Have the pupils find Rio de Janeiro on the map on page 243. Ask: "Is the city far from the Amazon River?" Help the class look at a political map of Brazil and find out where Brazil's big cities are located. Help the pupils find out that almost all the big cities are along the coast and not inland. Have the pupils read page 265. Ask: "What is the capital of Brazil?" Have the pupils explain in their own words why the capital was changed from Rio de Janeiro to Brasilia. Ask: "Was it a good idea to move the capital? What is the capital of the United States? In what part of the country is it located? Should it be moved to the center of the United States? Did the U.S. government have to do anything like move its capital to get people to move to the West? Was the American West easier land to develop than the Brazilian rain forests? Would Brazilians have moved to the Amazon Valley before the highway was built and land was cleared, even if they had been offered free land? Do you think that the development of inland cities like Brasilia and Manaus will help to develop the areas around them?"

Find pictures of Brasilia and bring them into class to show the pupils. Have them compare the pictures of Brasilia with those of Manaus on page 264. Ask: "Which of the two is the more modern-looking city? Is either of the cities in a region that has many people?" Have the pupils look at the map on page 262 again.



The city of Manaus in Brazil is an important trade center. It lies up the Amazon, almost 1,000 miles from the Atlantic Ocean. It is surrounded by rain forests and has no large cities nearby.



Brasilia The president had to do something. He knew that a new capital—Brasilia—had been built in the center of the country a few years before. Before that time, the capital had been Rio de Janeiro, which was on the coast, like most of the big cities in Brazil.

The government had wanted big, important cities in the center of the country, too. So a new capital was built. A new road was laid from the city of Belém, at the mouth of the Amazon, to the new capital. The road opened up inland Brazil. New towns sprang up. Old towns became wealthy.

And now the Amazon Brazil's president decided he would do the same kind of thing. He would open up the only large area in the world that is still unexplored—the Amazon Valley. He would do it by building a road.

The Amazon region is half the size of the United States. There are only four people living in every square mile. That means that there is room for all of the poor and landless people of Brazil. Today 75 percent of the settlers in the Amazon are from northeastern Brazil.

Is that a lot? Do you know how much of something 75 percent is? To find out, draw a circle. The circle stands for the whole, let's say, pie. Now divide it in half by drawing a line through the middle of the pie. Color in half the pie. Divide the uncolored half in half again. Color one of those halves. The colored areas of the pie equal 75 percent of the whole pie.

◆ brə zil' yə

◆ bæ lem'

◆ Why do you think building a road through the Amazon Valley will help bring people and business to the area?

Ask: "Which of the two cities is built on high land and which on low land?" (Brasilia is on a high plateau.) Tell the class that not only have highways been built to the north, west, and south of Brasilia, but it has railway lines also. Inform the pupils that people once said that a highway to Brasilia, which would have to be built through rain forests, would wash away in rain. The opening of Brasilia was celebrated in 1960. The highway has not been ruined by the rain, and the city is bigger than ever. Brasilia has the things all modern cities around the world have—universities, hospitals, newspapers, television stations, libraries, government buildings, stores, and so on. Ask: "Do you think the success of the highway to Brasilia gave the Brazilian government an example of what would happen in the Amazon Valley once a highway was built?"

Tell the class that the opening up of the Amazon Valley has already brought about changes in Manaus. There have been as many as 100 new businesses starting in a single month. The reason is that Manaus was made a free port. This means that people can send goods there from all over the world without paying taxes on them. Therefore, the goods can be sold more cheaply. Ask: "Will resources and goods that cost less, cheap labor, and good means of transportation bring new businesses to the Amazon?" Inform the pupils that Manaus now has factories making products from the parts brought in cheaply from elsewhere. It also has businesses using the lumber that is cut down from the rain forests.

Factories use other resources of the Amazon also. Goods can be shipped anywhere along the river from Belém to the border of Peru by ocean liner. Ask: "Do you think it will be easier for places in inland Brazil to get manufactured products now? Might they be cheaper than they were before? Why?"

Have the class read pages 266 and 267. Ask: "What natural resources does the Amazon have?" Help the class find out what some of these resources are used to make. For example, manganese is used in batteries, fertilizers, and paint driers.

Have the pupils find out about big cities like São Paulo. Tell the pupils to find it on a map. Next, have them do research to find out how many people live there (about 6 million people—it is the sixth-largest city in the world) and what kind of industries the city has. Have the class look at a resource map of Brazil and find out if the area around São Paulo is rich in resources. Ask: "Is São Paulo in a good location for the development of modern industries? Does it have good transportation routes? Does the Amazon have resources that the industries in São Paulo can use? Do you think big industries will develop in the Amazon also? Do many big cities and industries throughout a country help make that country richer?"

◆ Why do you think people wanted to find gold, diamonds, and oil?

◆ mang' gə nēz

◆ bōk' sīt

◆ ə lū' mə nēm

The Brazilians hope that one day the Amazon Valley will have large cities like São Paulo. It is in southeastern Brazil and is the center of the country's industry.

Looking for wealth Settlers did not start moving into the Amazon Valley right after the president announced he would build a road. First, plans had to be made. Engineers went to work. Scientists working for the government went into the forests, looking for metals. They especially wanted to find gold, diamonds, and oil.

They found many metals, such as iron and tin. They found manganese, which is used to make iron stronger. They also found bauxite, which is used to make aluminum. Do you think these are as valuable as gold and oil?

Next, the large companies went into the Amazon Valley. They built big plants equipped with modern machines and tools. They built ports for large ships. These companies gave their employees air-conditioned houses, hospitals, schools, and stores.





Have the class read from page 267 to the first three lines on page 269. Tell the class that they have already learned why crops do not grow well in the rain forest. Then ask: "Why do people think they can grow large plantations of rice, coffee, and sugar in the Amazon? Do you think that some areas of the Amazon have good soil? Can they use fertilizers and modern farm methods to improve the soil? Why do some scientists say that the Amazon will become a large desert if people cut down all the trees and try to set up large plantations? How does the Brazilian government hope to prevent this from happening? Will it let the settlers and new companies cut down all of the rain forest?"

Brazil's hope Brazilians also want to move cattle into the Amazon region. They want to build large plantations of rice, sugar, coffee, black pepper, and oil palms in the valley. Scientists are trying to find new crops that will grow in the soil of the rain forests.

But a jungle is a strange place. As you have read, there are few minerals for crops in the Amazon. And there is a huge amount of rain. Farmers cannot farm land that is covered with trees and vines and plants. So they cut down the trees. What happens when you cut down trees in a rain forest? First, the rain falls directly on the earth. It turns the earth into mud. Then the sun beats down directly on the earth. It hardens the mud.

Cutting down the rain forest is hard work. A team of four men is needed to cut down large trees, such as the one shown in the picture.

Tell the class that the Brazilian government is attracting settlers by promising them a house, 250 acres of land, some simple tools, and some money to get started. The house and the land cost \$945, and people have up to 20 years to pay the government back. The government is building farm colonies of 50 families. Each colony will have its own school, health center, and post office. The government will help the farmers by buying the crops they raise. Ask: "Which part of Brazil will most of the settlers come from? Why will they settle in the Amazon Valley? Do you think many of the new people will be skilled?"

■ Can you think of anything else the Brazilians can do to keep their soil good for growing crops?

In addition to the trees, workmen must cut down the many vines, bushes, and other plants that grow in the rain forest. They use giant bulldozers to do this. During the rainy season in April, both men and machines often cannot work. It is difficult to see through the heavy rains. Machines become stuck in the mud. Clothes do not dry out.

When the earth is soft, the farmers can grow very good crops. But when the mud hardens, the crops grow poorly. Finally, crops cannot be grown at all, and the farmers must move on. What happens then? If the area of cleared land is small, the rain forest trees and plants soon grow again. But if the area is very large, almost nothing will grow. The area becomes a desert.

Government plans The Brazilian government does not plan to let this happen in the Amazon. It will let settlers cut down only half of the trees. Parts of the rain forest will remain as they are. Will this help?



Nobody really knows yet. The answer will come long after you have read this book. Perhaps you will read the answer in 20 years.

THE NEW PEOPLE OF THE AMAZON

Settlers The government has already set aside land to be colonized, like the American West. But who will come? Think about it for a moment. Do you think rich people will give up their homes to come and farm the land? Do you think doctors and salesmen and mechanics will want to come to the frontier?

New colonists are already coming. They are given a simple house to live in and 250 acres to farm. They live in villages but work in the fields. In time, there will be schools and movies and bowling alleys. But for now, life is hard.

One colonist has told why he came to the new land in the rain forest.

I used to work like a dog on my little plot, while my family grew and everything else stayed tiny. I used to look to heaven and say, "Oh my God, when are we going to see a little rain?" There was no future. There are no forests there, just too many people. Someone told me that in this thing called Trans-Amazon, one could have a house, land, seeds, profits from crops, schools, hospitals, bank financing, and so on. I said to my wife: "If anyone finds all that in one place, it would have to be heaven."

The farmer knows that the life he has chosen is not heaven. But it may be better than the life he had. There is a saying in the rain forest: "Cry all you like, but don't stop working."

◆ To colonize (kol'ə nīz)
land is to settle it.

◆ An acre is a little over
280 feet long on each of its
four sides. Is a farm of 250
acres a large farm?

◆ To finance something is
to lend the money for it.

Have the class read page 269. Tell the class that the settlers have many reasons to become discouraged. They often have to wait months at river ports to get the boat to take them up the Amazon to their destinations. After they arrive, many settlers discover that their houses are still unfinished or that their lands are still uncleared. Ask: "Did the early settlers of the United States find houses waiting for them? Did they know whether they would be able to succeed? Did they suffer hardships getting to their destinations? Do you think it is ever easy to be a pioneer? Do you think that the frontier also attracts lawless and rough people? Do these kinds of people make life harder for the settlers? Do settlers have to be strong and independent? Why? Why did the man you read about pray for rain? Why is life in the rain forest better for him than the life he had been living?"

Have the class read pages 270–271. Ask: “What do you think will happen to the Indians of Brazil? Can they and their way of life survive? Can they feel free in an Indian park? Will they feel their life has a purpose? Does the Brazilian government owe something to the Indians? Should the Indians have a say in what happens to their lands? Will it be easy for people who do not think the same or who do not understand each other to come to an agreement? Do you think they can come to an agreement that will satisfy both sides?”

Activities

1. Have the pupils hold a debate on moving the Indians of the Amazon onto Indian parks. Have one side defend the right of Indians to the rain forests of Brazil. Have the other side defend the need of Brazilians for the land and the right to unify the land, build it up, and move the Indians elsewhere for the national good.

Some Amazon Indians sleep on beds raised above the ground on stilts. Why do you think they do this? Would the Indians change this way of sleeping if they became modernized? What other ways might the Indians in this picture change if they learn modern ways of life?



What will happen to the Indians? What do you think will happen to the Tupi Indians of the Amazon frontier? Do you think they will be affected by the new colonists? Do you think the two groups will get along? If not, what do you think will happen? If they moved to cities, do you think the Tupi Indians could keep their way of life? Do they need the rain forest as it is? Or is it more important for the many Brazilian colonists to find a new and better way to live?

Indians and the highway Many Brazilians are worrying about the Indians and what will happen to them when the highway goes through their lands. Those who study the Indians say they will do one of two things. Some will do what many Indians have already done. They will become like other Brazilians.

They will wear Western clothes and learn to speak Portuguese. They will move to the cities.

Other Indians will not do that. They will flee deeper into the forests. There, they will try to keep their old way alive. However, it is only a matter of time before the Indians become modernized.

Indian parks A government agency called the Bureau of Indian Affairs wants to move the Indians of the Amazon to large parks like the Xingu National Park, which is south of the Amazon Valley. There, the Indians can live the way they want. But they will have enough food to eat, pure water to drink, and modern medicines to help them fight the white man's diseases. There, the Indians can learn new ways of earning a living.

The solution to the Indian problem has yet to be found. Meanwhile, the highway goes on. The search for more metals and natural resources goes on. The Brazilians already know the Amazon is rich in natural resources. They hope it will become an important region in the future.

◆ shēng' gǔ

◆ The Indian parks are somewhat like the Indian reservations in the United States. Have these reservations been successful? Explain your answer.

1. What language do most people in Brazil speak?
2. Where is the Trans-Amazon Highway being built? How long will the highway be when it is finished?
3. Why are the Brazilians building the Trans-Amazon Highway?
4. Why are people willing to settle in the Amazon even though life is hard and there are few amusements?

2. Tell the pupils to imagine they are a group of colonists. Have the pupils write a script for a play about a settlement meeting. Have the settlers discuss their most serious problems and whether they can solve them. For example, they might discuss how they will get new seeds if theirs rot; how they will get electricity; how they will attract doctors, teachers, and mechanics; and whether they need a jail or police.

3. Have the pupils pretend they are newspaper reporters. Have the class make up a front page with headlines announcing the finishing of the Trans-Amazon Highway. Have members of the class write different features on the hopes the government has for the highway, any special events that stirred Brazil during its construction, and any advice or warnings scientists or other people feel they should give the settlers and Brazilian public at large. Tell interested pupils to draw cartoons to add to the front page.

Answers (p. 271)

1. Most people in Brazil speak Portuguese.
2. The Trans-Amazon Highway is being built across the Amazon Valley at the widest part of Brazil to the border of Peru, where it will connect with a highway going to the Pacific coast. When the highway is finished, it will be almost 3,500 miles long.
3. The Brazilians are building the Trans-Amazon Highway to open up the Amazon Valley to settlement and industrial development.
4. People are willing to settle in the Amazon Valley because they are poor. Where they now live is crowded and does not have enough jobs or resources.

INVESTIGATING THE UNIT

Gathering Information

Brazil has other regions besides the Amazon Valley. They have different climates, kinds of land, and natural resources. And the people live in different ways. Find out about these regions from the library.

Grouping Information

Divide the class into groups, one for each region of Brazil. Have each group study the geography of their region. Next, draw a large map of Brazil. Have each group shade in their region on the map in a different color. They should also put the following information on the map:

1. climate and kinds of land (lakes, rivers, mountains, deserts, and grasslands)
2. natural resources and industries
3. large cities and capitals (Make special symbols for all capitals, cities with over 250,000 people, and the five largest cities.)

What Does the Map Tell You?

Now look at the map you have drawn. In what part of Brazil are the large

cities located? Why? Where is the important industry located? Why?

Using What You Have Learned

Imagine it is the future and the Amazon Valley has been settled. It now has large cities crowded with people. Also, imagine you are a famous artist and have been asked to make a large painting for the Amazon's new capital building.

Draw the picture. It should show your feeling about the importance of the valley. Put in the different people who have lived in the valley. Include any special problems the settlers had to solve and any important events that might have happened.

Comparing and Contrasting

Pretend you are a new settler in the Amazon Valley. Write a letter to your family back home in São Paulo. Tell them about your new home and about how different it is from the way your life was in the big city. Explain, though, how the Amazon has changed in the short time you have been there and how much more you expect it to change in the future.

THE UNITED STATES: AGRICULTURE TO INDUSTRY

O I see . . . that this America is only you and me . . .
Freedom, language, poems, employments, are you and me,
Past, present, future, are you and me.

WALT WHITMAN

Knowledge Objectives

Understanding the importance of invention and technology in the successful use of resources.

Knowing that farming was the first major industry in the United States.

Understanding why the development of steam power is considered by some to be the single most important invention of all time.

Understanding how improvements in transportation technology helped lead to the speedier settlement of the United States and the increased industrialization of the country.

Understanding what automation is and why it forced many workers to develop new skills.

Value Objectives

Appreciating the creativity of inventors and the way their discoveries changed people's lives.

Appreciating the courage and stamina of America's pioneers.

Valuing our environment and becoming aware of how natural resources are lost through overuse and unwise use.

Skills

Analyzing information about technology.

Comparing life during the colonial period of the United States with life today.

Reading maps of the land, railroads, regions, and settlement patterns of the United States.

Reading charts to interpret information about farms and their sizes in the United States.

"Reading" pictures to see what they can tell us about the United States.



LESSON 1 (pp. 274-280)

Lesson Objectives: Recognizing the difficulties of the first settlers in America. Understanding that the United States expanded its territory in several stages. Becoming aware of the way of life of colonists.

Lesson Skills: reading maps, analyzing, comparing, evaluating

Introduction

Have the class read the poem by Walt Whitman on page 273. Ask: "What was America to Walt Whitman?" Make sure the pupils understand that for Whitman, America was not just a place where there are piers, factories, stores, schools, and libraries. America was its people and everything that had to do with its people. It was a nation—a place where men and women could enjoy equality and could bring up strong, self-reliant children. Whitman saw America as a place for "you and me." It was all the things that made up the country: its mountains, prairies, deserts, and fertile valleys; its changing character, as influenced by science and inventions.

Lesson Development

Have the class read page 275. Ask: "Does anyone know who the first English settlers in America were? Where did they settle? Did they write letters and diaries? Did they tell their children about their lives, and did their children tell their children? Have your grandparents told you stories about the 'old days'? How did we learn about life in colonial America?"

A Changing Way of Life



The way of life of Americans has changed a lot since the United States became a nation. Every change has affected the land. And things are moving faster today than ever before.

How do we know the United States has changed? Well, there are millions of people now living in the United States who remember when there was no television. When they were young, these people only dreamed about flying in an airplane. They can remember when no movies were made in color and when hamburgers only cost a nickel. How old do you think these people are? See if there is anyone at home who remembers those times.

Now imagine that you were one of the first people to settle in America. Can you imagine what kind of a world these people lived in? Read ahead and see how much the United States has changed in the past 200 years. As you read, ask yourself why the United States has changed so fast.

THE LAND AS IT WAS

The first English settlers to come to America sailed from Europe in small, crowded ships. When they landed, they saw a new kind of world. Europe had been thickly settled with people and cities. But in America, forests covered the land as far as the eye could see. The seas and rivers were full of fish. There were no cities anywhere.

These Europeans were not the first people to settle in America, though. Indians had been living in America long before them.

Discuss with the class the early colonization of America. Tell the pupils that the first colonists landed at what is now Jamestown, Virginia, on May 17, 1607. They came on three ships: the *Susan Constant*, the *Godspeed*, and the *Discovery*. The colonists went ashore and found tall pines, cedars, and wild grapes along the James River. (Have the pupils find the James River on a land map of the United States.) As the settlers moved far away from the shore, they discovered that the lowlands of the Atlantic seaboard gave way to rolling hills and beautiful mountains.

The second group of colonists, called the Pilgrims, came to America on the *Mayflower*. Although they were supposed to land in Virginia also, this group dropped anchor at what is now Provincetown Harbor on Cape Cod, Massachusetts. The Pilgrims found Cape Cod too sandy and went on to Plymouth, across the bay. Although its soil was poor, the area around Plymouth could be farmed a little. Fortunately, the sea abounded with cod, for which the cape was named.

Tell the class to read page 276. Ask: "What would you do if there was no grocery store to buy food from? Can you imagine how the colonists felt when they arrived with very little food left, and snow beginning to cover the ground? About how long would it take to raise a crop?"

Inform the pupils that the settlers in Massachusetts barely survived their first winter. Over half of the 24 heads of families and 20 of the 24 mothers died. The settlement might have been lost except for the help of two Indians, Squanto and Samoset, who had learned English while captives on English vessels.

Of the 500 settlers of the Jamestown colony, only 65 survived the winter. The marriage of John Rolfe to Pocahontas, daughter of an Indian chief, in 1614, allied the Indians of the area with the colonists. Ask: "How do you think this helped the colonists?"

Ask: "Do you think all of the Eastern Woodland Indians were friendly to the strangers that came in the 'great bird with white wings'?" Tell the pupils that some Indians were helpful and friendly, while others were not happy to see the white man come to their territory.

Tell the class to read page 277 and then look at the map on the page. Ask: "What do you think this map tells you? Had the colonists spread far by 1660?" Have the class look at where the colonists had settled by 1783. Then have pupils find the Appalachian Mountains on a land map of the United States. Tell the class that at first only a few settlers were able to find a way across these mountains. A hunter named Daniel Boone found a path, or gap, in the mountains. This was the Cumberland Gap. The opening of the Wilderness Trail, the road across the gap and from Tennessee to Kentucky, by Daniel Boone in 1775 helped open up the West.



How the Indians lived The Indians had learned to hunt and fish and farm. They understood the land. They knew that the soil needs a rest every few years. They never killed more animals than they needed for food or clothing. They never worried about running out of things they needed. Why?

To the Indians, the forest was a friend. It gave them food, clothing, and shelter.

Here is a song the Indians wrote about their land.

O our Mother the Earth, O our Father the Sky,
Young children are we, and with tired backs
We bring you the gifts you love . . .
O weave for us a coat of brightness,
So we may walk where birds sing,
So we may walk where grass is green,
O our Mother the Earth, O our Father the Sky.

Why do the Indians call the earth their mother and the sky their father? How do people feel about their mothers and fathers? What does this song tell you about the Indians' feelings for their land?

Strange land The English settlers, however, did not know how to use the land. They cut down trees so that they could use the land for farming. They needed much more land than the Indians did because they depended on what they planted for food.

The changing of forests into fields was the first big change in the land of the United States.

A mistake The eastern woods began to be used up. So did good farmland. Because there were no trees to protect the soil, rain washed the soil away. Crops would not grow in the sandy or rocky soil that was left. But this did not worry the English settlers. When one farm wore out, they moved farther away to new land.

Frontier The new land where no Europeans had ever lived was called the frontier. When one area became crowded, people pushed out and

► What kind of work do you think these English settlers did in Europe?

► Look at the map below. In which direction were the settlers moving?

Inform the pupils that at one time much of the United States was under the control of foreign countries, such as France, Spain, Britain, and Mexico. Ask: "How do you think these areas became part of the United States?" (through purchase and war) Tell the class to look at the map again. Explain these points:

1. The 1803 area was the Louisiana Purchase, bought from France.
2. The Red River settlement in western Minnesota and eastern North Dakota became part of the United States in 1818 as a result of Britain's agreeing to accept the 49th parallel as the boundary between the United States and Canada.
3. Florida was bought from Spain in 1819.
4. Texas was under Mexican rule until the Texans defeated the Mexicans and established the Republic of Texas. Texas became part of the United States in 1845.
5. The United States won the 1848 area from Mexico in a war.
6. The 1853 Gadsden Purchase was acquired from Mexico.
7. The Oregon Country was claimed by both the United States and Great Britain. The two countries settled the dispute peacefully. The United States took the area south of what is now the Canadian border, and Great Britain took the land to the north (what is now British Columbia).
8. Alaska was bought from Russia in 1867. Ask: "When did Alaska become the 49th state?" (1958)
9. Taken from the Hawaiians, Hawaii became a territory of the United States in 1898. Ask: "When did Hawaii become the 50th state?" (1959)

GROWTH OF THE UNITED STATES



Tell the pupils to read page 278. Ask: "What kinds of foods did the Indians help the settlers plant?" Have the class look at the picture on page 276. Ask: "Why do you think it was a good thing to bury a fish with the kernels of corn? Why is fertilizer necessary when soil is used again and again?"

Tell the class that the first houses were flimsy and poorly built. The colonists soon tried to build English-type cottages of timber and clay. But until the colonists learned to add lime or oyster shells, the clay would not hold together. Thus, the log cabin became the typical house. A log cabin usually had one large square room and a huge fireplace. Tell the pupils to look at the picture on page 278. Ask: "Is the house in the picture a log cabin? Do you think log cabins are difficult to build?" Inform the class that the Swedish settlers in Delaware were the first people to build log cabins in America. In order to build one, the colonists had to find logs of about equal size and cut notches in them so the logs fitted together.

◆ **Natural resources** (nach'ə rəl rē sōrs'iz) are those things which nature gives man to use. Trees, rivers, coal, and gold are some natural resources.

◆ Do you think people like the settlers invent new things because they have to find better ways to live? See if this explains the changes in America.

opened new frontiers. The American people thought there would always be new frontiers with more **natural resources** to move to. America was settled by opening frontiers. Look at the map on page 277. Where was the frontier when the American Revolution began in 1775?

How the new settlers lived Frontier life was difficult. It was hard work to clear land in the forests. But that was only the beginning of the work. Settlers needed houses. At first, they lived in simple huts made of sticks and leaves. Later, they learned how to make log cabins.

Building the farm There was much more work to do even after the house was built. The men – and any boys big enough to swing an ax – cut down the smaller trees around the house. Now the family was ready to begin planting. The crop they grew was one they had seen the Indians eating. It could grow easily between the tree stumps. It was called corn. Corn became the main food of frontier settlers.





Everyday life Life on a farm was very tiring. Farmers did everything with their own hands and with the help of a few animals. In the spring, they had to plow and seed the fields. In early summer, they cut grass and dried it for hay. In the fall, they gathered the crops and stored them for winter. All year round, they had fences to mend and firewood to cut.

Since they did all the farm work by hand, everybody had to help. Girls helped their mothers cook and clean and mend clothes. Boys dug out weeds in the cornfield and fed the animals. What other kinds of jobs do you think children could do?

Center of the house The most important place in the house was the fireplace. People would hang big iron pots over the fireplace for cooking. They usually made porridge, a thick soup, or stew. Sometimes they roasted meat in front of the fire. The small children turned the meat so it cooked evenly and did not burn on one side.

► What kind of work could animals help with? Why did farmers not use tractors and other farm machines?

► What is the child in the picture doing? How did the children turn the meat?

Instruct the pupils to read page 279 and the first section of page 280. Ask: "If you went to a new country, would you miss some of the foods you had been used to? Would you miss milk if you could not get it?" Tell them that the settlers tried to make their homes as much like the ones they had left as possible. They wanted their usual foods, and they sent ships to Europe to get them. They imported the goats, pigs, cattle, and sheep that they were used to raising for food. Ask: "What kind of food would these animals need? How could the settlers get the oats that the animals needed and the wheat and barley that the settlers missed and wanted?"

After the pupils have looked at the picture on page 279, ask: "Do you think men and women did the same kind of work on the farms?" Inform them that women did work like baking breads and pastries; drying and preserving fruits; making apple butter, maple sugar, and syrup; and making butter and cheese from milk. They made animal fat into soap and candles. The men butchered the cattle and pigs and hung the sides of meat in the smokehouse. They tanned hides to make into shoes, saddles, and harnesses. Children helped to card the wool and spin it into yarn, to weave into cloth or to knit into woolen garments.

Activities

1. Give the class a pile of small sticks or similar shaped material and have the pupils try to fit them together to make a log cabin.
2. Have the pupils find out who Squanto was and what he did to help the colonists.

► What is the center of life in your house? Would you like to have a fireplace?

LESSON 2 (pp. 280–285)

Lesson Objectives: Understanding how technology caused life in the United States to change after 1700. Learning about the development of the cotton industry.

Lesson Skills: recalling, comparing and contrasting, interpreting pictures, analyzing, evaluating

► How do you feel when you do things by yourself? How do you think early farmers felt? Does this help explain why Americans were ready to change very quickly?

The fireplace was more than a cooking place. It was the center of family life. In winter, it was the only warm place in the house. Everyone gathered around the fireplace at night. It was warm and bright. People did not listen to radio or watch television. They did not have many books. Instead, they made things. The father might fix a strap for a horse. Boys might whittle wooden kitchen spoons for their mother. And the mother and girls might spin wool into yarn for the family's clothes.

The only things frontier people could not make were metal products. They would send to the nearest town for ax heads or knife blades. Metal was very expensive, though. If a house burned down, the owners would search through the ashes for the iron nails. Then they would use them again in their next house.

CHANGES IN FARM LIFE

Farm life in America began to change during the 1700s. In the parts of America that had been settled the longest, farmers stopped making everything they needed for themselves. Instead, they began to sell the crops they grew. With the money they made, they bought cloth, furniture, and other things. Were farms getting bigger or smaller? How do you know?

Scientific farming Farmers were learning new ways to grow their crops, too. They learned about new kinds of seeds to use. They learned how to fatten their cattle, pigs, and sheep. Farm fairs were held. At the fairs, prizes were



given for the biggest animals and the best crops. Farmers learned from each other.

Plantations The American South was different from the rest of the country. Instead of many small farms, the South had a few large ones owned by a few very rich families. These owners were called planters. And their farms were called **plantations**. On a small part of the plantation, crops were raised for the planter, his workers, and his animals. But the planter grew a money crop on most of his land.

The South had a special kind of climate. It was the only place in the United States hot enough to grow certain crops. Yet many people wanted to buy these crops. And they were willing to pay a lot of money for them.

Most of the work on Southern plantations was done by black slaves brought over from Africa.

◆ plan tā' shēnz

■ What do you think a money crop is?

Introduction

Tell the class to recall how the colonists wanted goods from the mother country, England. Ask: "What did the colonists use to buy things from Europe? How did they get money? What do you think were the first products that were shipped from the colonies to Europe?" (furs and tobacco)

Lesson Development

Have the class read the rest of page 280 and pages 281–282. Ask: "What is the difference between a plantation and a farm?" (A plantation is a large estate on which mainly cash crops are grown. Work on the plantation is done by many laborers, who often live on the property.) Inform the pupils that one of the plants of the New World, tobacco, grew well on plantations.

When Columbus' crew landed in the West Indies, they found the Carib Indians using a fine powder that they inhaled through a hollow cane, which was called a *tabaca*. That powder was what we now call tobacco. No one knows how tobacco got to Virginia, but scholars believe Rolfe planted South American tobacco seeds in Virginia and that they grew so well that he was able to send his first shipment of tobacco to England in 1614. Many countries have banned tobacco in the past, without much success. Today, doctors are concerned about the effects of tobacco on our bodies. Ask: "Why do doctors think smoking is bad for the health?"

Help the class find out that not only did cotton become the dominant crop of the South, but it also changed the South's economy. Ask: "About how long was tobacco 'king of the South'? When was it replaced by cotton?"

Inform the pupils that although cotton was ideally suited to the climate and soil of the southern colonies, England prohibited its growth, for fear that cotton would compete with British linen and wool. But the demand for cotton grew. Finally, it was planted in Virginia in 1650. Because there was plenty of land and there were many slaves to work in the fields, cotton soon became an important crop.

You might want to tell the class that in 1790, 1½ million pounds of cotton were produced and 190,000 pounds exported. By 1808, 75 million pounds of cotton were being produced yearly, with 10½ million pounds being exported. Ask: "What does this tell you about the importance of cotton?"

■ Where do you think these cities were? Why?

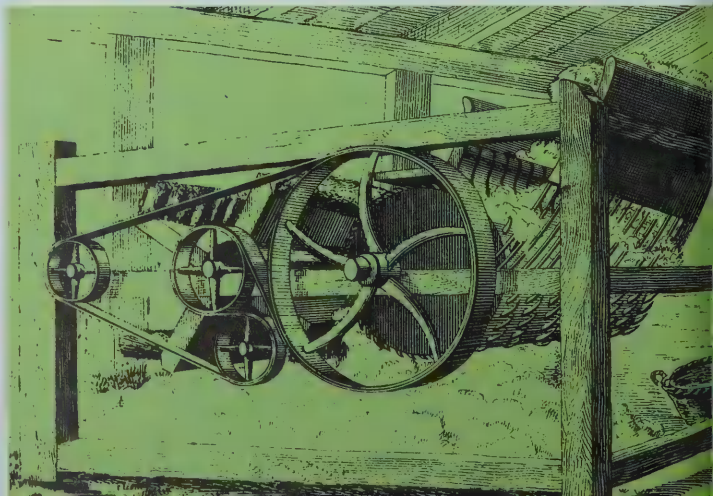
■ How did plantations help the United States grow? How did they change the land? What problems did they cause for the American people?

The cotton gin made cotton "King of the South." One man with a cotton gin could clean as much cotton as 50 men working by hand. Suddenly, it was easy for the planters to make money with cotton.

The South's first money crop was tobacco. People in the North and even in Europe paid high prices for tobacco. But around 1800, people discovered a new kind of tobacco that grew in cooler places. Southern planters needed a new money crop—fast! They began to raise cotton. People in the North loved the new cloth they could make from cotton. This cloth was soft, strong, and washable, too. Planters sold a lot of cotton. They sold it to merchants in the cities who sent it north and to Europe.

But the planters still had one problem with cotton. The fuzzy seeds of the cotton plant were hard to get out of the cotton. Slaves who worked on the plantations spent more time picking seeds out of the cotton than they did picking the cotton itself.

The cotton gin A Massachusetts man named Eli Whitney heard about the problem. He invented a machine called a "gin" (short for "engine"). This machine separated the seeds from the cotton neatly and quickly. The cotton gin helped the South grow by keeping the plantations going.





ELI WHITNEY

Eli Whitney did not make money on the cotton gin. After he invented it, people saw how easy it was to make. They set up their own gins all over the South. But Whitney went on to invent other things.

Whitney knew that the United States Army wanted to buy rifles. The army was afraid that there might be a war in Europe. So, in 1798, Whitney built a gun factory near a small river in New Haven, Connecticut. He was about to change industry in the United States.

In his factory, Whitney tried out a very important idea. It was called **interchangeable parts**. Until that time, a worker had to make every part of a gun by himself. He would fit together each part until the gun was complete. But every gun a worker made was a little bit different. A part from

one gun would never fit into another gun.

If a soldier's gun broke down in battle, he could not take a spare part and fix it. The spare part would be just a little too big in one place or a little too small in another. Whitney changed this by making all parts of a gun exactly the same size.

Whitney invented special tools to measure and make the parts. Soon many factories were using this idea.

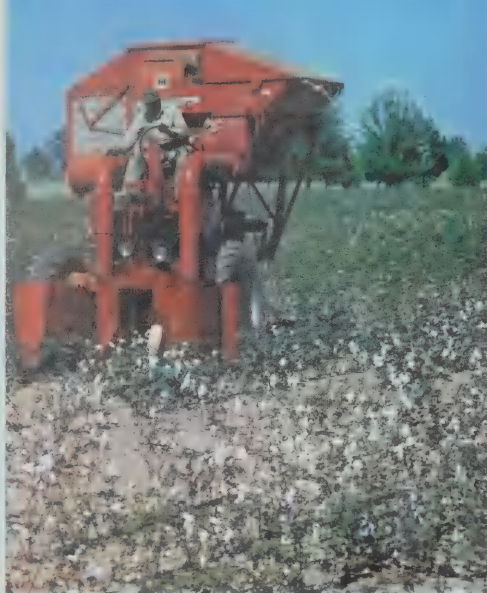
Whitney's idea was to lead to **mass production**. Since Whitney's invention made every part alike, every worker could make that one part all day. Each worker added a part until the gun was finished. In this way, more products could be made in less time. This method led to the **assembly line**. Eli Whitney had begun another important change in American life.

Have the class read the feature on Eli Whitney, on page 283. Tell the class that in 1793, Eli Whitney built a frame with teeth to comb the seeds from cotton bolls. As can be seen in the picture on page 281, roller brushes collected the clean cotton. Whitney's engine was so simple he found blacksmiths and ironworkers copying his machine—the cotton gin. Whitney tried to get sole rights to the cotton gin. After years of court battles, his patent was upheld, but by then Whitney was deep in debt.

To pay off his debts, Whitney undertook an Army contract. The Army was interested in his idea of interchangeable parts for muskets. Have the pupils explain what is happening in the picture at the top of page 283. Ask: "Why is it important to have interchangeable parts today? If a person needed a certain part for his car, would he have to have a special part made or could he get it at a parts store? How does this save time?"

Instruct the pupils to look at the picture essay on pages 284 and 285. Tell them that fabrics woven from fibers of various kinds are called textiles. For centuries, only fibers from plants and animals were used to make textiles. Animal fibers include wool, camel hair, silk, rabbit, cashmere, and mohair. Natural plant fibers include cotton, flax, and other fibers. Today, man-made fibers, called synthetics, include rayon, orlon, nylon, dacron, fiberglass, elastic, and others. Some synthetics are made from petroleum by-products.

Ask: "Can anyone explain what the pictures on pages 284-285 are telling us? Do you think the textile industry is a very large business in the United States? Do we have many cotton plants? Do we have flax to make linen? Do we have sheep? Do we have petroleum? If the United States has so many resources for textiles, why are so many of the clothes we wear today made in other countries?" Explain that often textiles that are made in the United States are shipped to other countries to be made into clothes or other articles. Because the rent, labor, or taxes in those other countries are lower, their products are cheaper.



Today machines are used in every step of making cotton cloth. Machines in the field pick cotton. In the factory, machines spin the cotton into thread and weave the thread into cloth. They also dye, decorate, and sew the cloth. For centuries, cotton, wool, and silk were the basic materials used for making cloth. They came from nature—the cotton plant, the sheep, and the silkworm. But after 1945, man-made materials, like nylon, began to compete with cotton.





Tell the class that even a single step in making fabric is a complicated business. Dyeing is a good example. Most fibers are dyed in large vats or drums. The most economical and most common method of dyeing is to dip the whole length of cloth into a solution. But designs can be printed on the cloth by rollers, stencils, screens, or block printing. On printed cloth the design only shows on one side. Completely different dyes have to be used for man-made fabrics. Usually, the dye is added to the material while it is still liquid. In that way, the dye is not a coating, but becomes part of the thread itself. The dyed liquid is hardened into thin filaments, or threads, which are woven into fabrics.

Activities

1. Have the class find and bring in pictures of various handmade fabrics like lace, brocade, embroidered cloth, and tapestries. Discuss the difficulties of making these textiles and the creative ability they show.

2. As a class project, have the pupils research the different equipment people have used in making fabrics throughout history. Have the pupils prepare a bulletin-board display of the various types of looms, spinning wheels, needles, machines, and so on, that they find.



Lesson Objectives: Learning that with the development of factories, the United States began to evolve as an industrial power. Recognizing the importance of the development of the steam engine. Understanding that improvements in transportation technology helped American industry to grow and helped open up the West.

Lesson Skills: reading maps, comparing, experimenting, evaluating

Introduction

Ask: “Why did the traders barter (swap goods in return for other goods) with the Indians? Could the Indians use the traders’ money? What kind of money do you think the colonists used? Did the colonists continue to use English money after they became independent?”

Lesson Development

Have the class read pages 286 and 287. Tell the pupils that some of the colonies began to print paper money of a fixed value. Ask: “What problems might have existed if the colonies had used different monies? Could the colonies have traded with each other?” In 1782, a common monetary system was established for all the colonies. Have the class guess why it was necessary.

Ask: “Why do big industries need money? How would they pay their employees without money? How would they buy machines and tools without money?”

◆ Rosin (răz’ən) is a hard, yellow material that is rubbed on things to keep them from being slippery.

◆ Where do you think cotton was made into cloth before 1790? Was it more expensive then? Why?

THE BEGINNINGS OF INDUSTRY

From the very beginning of settlement, there had always been a few industries in America. One of the oldest of these industries was the fur trade. For many years, traders had been pushing far into the wilderness to trade with the Indians for furs. They gave the Indians fake jewelry and whiskey for the furs. Then they cleaned the furs and sent them to Europe.

Another early industry was fishing. Soil was hard and rocky in New England. It was hard to farm, so many people turned to the sea. They caught lots of fish and dried what they did not use. Then they sold this fish in Europe and America.

Tar and rosin and turpentine came from the pine forests of the South. These products were used on ships. Tar was the most important of these products. It was smeared onto the ropes of ships to keep them from rotting. It was also used to coat the wood on the ships.

As the population grew, other small industries grew also. Blacksmiths, barrel makers, and pot makers sold their goods to farmers. Water-powered mills made grain into flour for bread. Sawmills cut logs into boards for building. Men called tanners made leather from the skins of animals.

The start of factories But it was cotton that really started big industry in America. In 1790, a man named Samuel Slater built a cotton mill, or factory, in Rhode Island. In the mill, the cotton plant was changed into cloth. The mill was a success. In fact, it was such a success that



other people followed Slater's example. Cotton mills were built in almost all the New England states. New England had many lakes, rivers, and waterfalls to turn the machines. New England became the center of industry.

THE IMPORTANCE OF STEAM POWER

The invention of steam power changed American industry. Factory machines had been run by water power or by wind power. But when the wind did not blow, the machines stopped. And when water froze in winter or dried up in summer, machines stopped again. If the United States was to grow, factories had to run all the time. A new kind of power had to be found. Steam was the answer.

Steam is made by boiling water. As long as there is water, steam engines can operate.

► Look at the map above. Which were the New England states? (Note: Maine did not become a state until 1820.)

► Watch water boil in a teakettle. What pours out of the lid?

Inform the pupils that cotton mills were not invented in the United States. England had cotton mills, but it guarded its secret from the rest of the world. A young British weaver named Samuel Slater, who worked in a cotton mill, memorized the parts of the machine. From his drawings, the first cotton mill in America was built in 1790. It was not until 1814 that the first complete factory for processing raw cotton into finished cloth was set up.

Have the class draw a time line of the development of textile-making: 1790, the cotton mill; 1794, the cotton gin; and 1814, the complete factory.

Have the class look at the map on page 287. Then make an outline map of the United States. This can be pinned to a bulletin board and illustrated to show the development of industry.

Tell the class to use the regions on the map on page 287 to show areas of industries, products, or natural resources. The outline map can show, for example, cotton, forest, and petroleum products in the South; wheat and corn in the Middle West; factories in the New England and Middle Atlantic states; and mining, forestry, and agriculture in the West.

Have the class read pages 288 and 289. Tell the pupils to look at the picture of the steamboat. Ask: "Has any member of the class taken a ride on a paddle-wheeler? Was it a smooth ride? Did the ship move quickly? What kind of fuel did it use to power its engine?"

Inform the pupils that Robert Fulton was an American artist, inventor, and engineer, who was born in 1765 in Pennsylvania. His development of the steam-powered boat opened a new world for transportation. He used the steam engine, developed in Scotland by James Watt. This engine has been called the "greatest single invention of all time." It was a vital key to industrialization and made it possible to build factories wherever coal either was available as a resource or could be transported.

Early steamboats had two paddle wheels, one on each side. When they were turned by the engine's power, these wheels made the boat move.

Up the river Robert Fulton was the man who made steam power famous in the United States. In 1807, he sailed a steam-powered boat between New York City and Albany. People cheered Fulton as his steamboat sailed up the river. Until that time, boats could only sail in the direction that the river flowed. But a steamboat could sail against strong winds. Trade and travel grew.

Canals Americans had always used boats for transportation. Roads were narrow and rough. A horse could not carry as much as a boat. But there was a problem with waterways in the United States. They only ran from north to south on the eastern coast. People wanted a way to sail to the western frontier.

People began to think about building canals across the land. A canal is a thin pathway that



is cut through land and filled with water. Boats could be tied by rope to mules or horses. The animals would walk along the canal on a small path, pulling the boats in the water behind them.

Read this song that some men sang in 1836.

We're diggin' a ditch through the gravel,
Through the gravel and mud and slime, oh boy
So the people and freight can travel,
And the packets can move on time, oh boy.

Who do you think the men were? What were they doing?

The Erie Canal The most famous American canal was the Erie Canal. It connected the cities of Albany and Buffalo in New York State. The canal opened up the Midwest to the eastern settlers and the world. Passengers and freight could sail across the Atlantic Ocean and into the Great Lakes. What route would they take from the ocean up to the lakes?

The Erie Canal was opened in 1825. Many cities grew up along the canal. Other canals were built all the way down to the Mississippi River. Business was great for canal builders and the people who used them. But around 1840, a new machine put the canals out of business. It moved quicker than canal boats. It could travel almost anywhere and carry more goods. It was called the locomotive.

Railroads After Fulton's invention, men began thinking of new ways to use the steam engine.

◆ Packets are boats that carry mail and goods.

◆ lō kə mō'tiv

On its first trip in August, 1807, Fulton's *Clermont* took 32 hours for a 150-mile journey. A month later, regular commercial service began, and in 1838, the first transatlantic crossing by steamship was made, taking 18 days. Ask: "How long does it take to cross the Atlantic by ship today?" (about 4 days)

Tell the class that in a song about the Erie Canal, there is a phrase, "Git up there, mule, here comes a lock . . ." Ask: "What do you think the term *lock* might mean?" (a stationary, watertight enclosure into which the barge or vessel has to move, so that the water can be raised or lowered from one level to the next) The Erie Canal, one of the great engineering feats of its time, today has 338 miles of water with 35 locks.

Have the pupils read pages 290 and 291. Ask: "Who or what is Tom Thumb?" Some pupils may be aware that a circus midget was named that. But it was also the name of an early locomotive in the United States in 1830. It is famous because it was in a race with a stagecoach and lost. The early railroad trains could go about 18 miles per hour and lacked comforts. Have the class find pictures of both early and modern railroad cars. Tell them to compare them and discuss the differences.

Inform the class that in the early days of the railroads, there were many private lines and their tracks were different sizes. Have the class discuss the difficulties of sending freight when the products had to be loaded and unloaded on different railroads because the boxcars could not be shunted onto a different railway line. A standard gauge was not adopted until the 1880s. Have the pupils look at the map on page 290. Tell them to find the Union Pacific; the Southern Pacific; and the Atchison, Topeka, and Santa Fe lines. Explain that the first transcontinental line was formed when the Union Pacific Railroad was joined to the Central Pacific Railroad from the west at Ogden, Utah, in 1869. A second transcontinental line was formed when the Atchison, Topeka, and Santa Fe was connected in 1881 with the Southern Pacific line. This made it possible to go from San Francisco to New Orleans.

Ask: "Would the early railroad men have seen the variety of freight cars we have today: refrigerator cars, automobile cars, boxcars, cattle cars, flatbeds, and tank cars? How did the adding of different kinds of freight cars help industry in the United States?"

Look at the map below. What railroads would you take to travel from California to New York?

Someone decided to put the steam engine on wheels and let it pull wagons. But the steam engine was too heavy for the dirt roads of the United States. So inventors went to work. At last, someone decided to build rails for the engine to roll along on. The steam locomotive was invented.

In 1831, there were less than 100 miles of train track in the United States. In 1835, there were more than 1,000 miles of track. By 1850, every state east of the Mississippi River had tracks. More than 9,000 miles of track had been laid in 20 years!

New industries Railroads changed the land. Goods could be shipped from the East to the



West and the South. Farmers on the frontier could send crops back East. Cities sprang up. Chicago became a center for railroads. Look at the map on page 290. Can you see why?

New industries grew up because of the railroads. Factories hired many workers to build steam engines. Mines were dug to find iron for the rails. More factories were built to melt the iron into steel. People invented new machines to shape the engine parts. Factory smoke was seen all over the country.

Canals, steamboats, and railroads helped open the interior of the United States. They helped cities grow in different parts of the country. By the 1840s, the United States was no longer a nation of farmers. Although many people still lived on farms, industry was growing fast.

► Railroads became such a big part of American life that people wrote songs about them. Can you think of one? What do its words tell you about railroad life?

► Have you ever dumped wet sand out of a pail? What shape did it make? Does this help show you how engine parts were shaped?

► Interior means the inner part of a thing or place.

1. In what part of the United States did the early settlers live?
2. What is a frontier? Where did the people who settled the frontier get the food, tools, and other things they needed to live?
3. Name three ways farmers' lives began to change in the 1700s.
4. What is a natural resource?
5. What is a plantation? What were the first money crops that planters in the South grew?
6. What is a canal? Where in the United States is the Erie Canal located?
7. Name three inventions that helped change early American industry. Who made the inventions?

Activity

Have the class experiment with wind wheels to see how wind or water can turn a wheel. Have pupils cut a circle out of aluminum foil. Cut four slits at each quarter of the circle and fold down four flanges so that air will strike them. Insert a toothpick through the center and hold the wheel in front of your mouth. Blow the wheel. Hold it under dripping water and watch it turn. Demonstrate how the wheel turns when held over the spout of a teakettle of boiling water.

Answers (p. 291)

1. The first settlers lived in 13 colonies along the Atlantic coast.
2. Frontiers are lands that have not been developed. Most items needed for life along the frontier had to be grown, built, or made by the family who moved there. Sometimes, families traded with one another.
3. Farmers began to sell crops and use the money to buy other things. Farmers increased their knowledge about farming and raising animals. Farms became larger. On plantations, slaves were used.
4. Natural resources are those things which occur in nature and are used by man.
5. Plantations are large farms that raise cash crops and use resident labor.
6. A canal is a waterway cut through land, usually connecting two bodies of water. The Erie Canal connects Lake Erie with the Hudson River.
7. Eli Whitney's cotton gin, the first cotton mill built by Samuel Slater, and Robert Fulton's steamboat were inventions that helped early American industry.

LESSON 4 (pp. 292–299)

Lesson Objectives: Understanding that the development of machines changed the nation. Learning which discoveries helped the steel and oil industries to grow.

Lesson Skills: analyzing, comparing, hypothesizing, reading diagrams

Introduction

Have two members of the class pretend to be visitors from earlier times. Have other pupils show them the wonders of the modern world.

Ask: "What would someone from the days of the Pilgrims do if he saw you turn on a television set or flick a switch to turn on electric lights, a washing machine, or a vacuum cleaner? Would he think you were a magician? Might he think you were a witch?"

The Industrial Explosion



With the coming of the railroads and steamboats, new frontiers were opened up. Settlers began to pour into the rich farmland of the Midwest. Thousands of these settlers came from worn-out farms in the Northeast and the South. Many more settlers sailed from Europe. They were looking for a new life of greater freedom and for some land of their own to farm. The population of the United States shot up. In 1840, there were about 17 million people in the country. By the end of the century, there were over 75 million people.

Population and change Would the land have to change to hold all these people? Could farmers grow enough crops to feed everyone? The answers to both questions seemed to be yes.

Here is how one man described what he saw out West in 1859.

The whole region seems to have been wooded. Yellow and white pine, white, black, and live oak, with tall cedars, once spread over the whole country. But wood is wanted for everything. Most of the land has no owner, and everybody cuts and chops as if he cared for no one but himself, and no time but today. Long, old oaks are cut down just for fuel, leaving their trunks to rot. Trees are used for nothing, just because they are handy, and it is nobody's business to save them. There was enough wood here ten years ago to satisfy every need for a century; but ten years from now they will be sending away and paying high prices for logs that could have been growing at their doors.

◆ Fuel is anything that can be burned to make a fire.

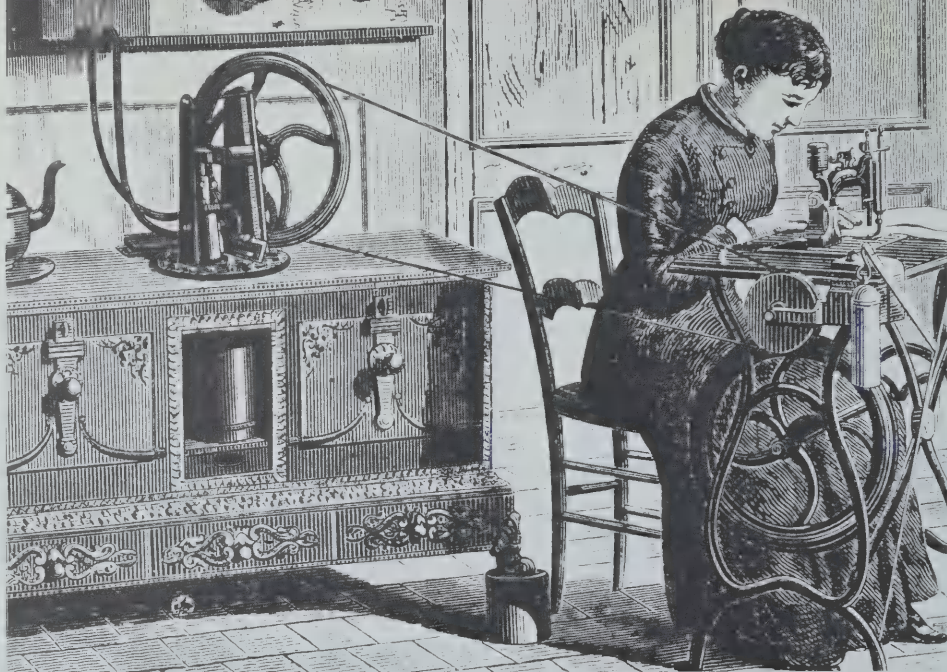
Lesson Development

Tell the pupils to read page 293. Ask: "Why was the United States able to support many people on its land? Why were there so many new jobs in the United States around this time? How did people living then cut down trees and lift heavy logs? By what method do people move lumber at the lumberyard today?" Have the class think of other jobs that we do by machinery today that had to be done earlier by physical effort.

Ask: "How many different kinds of workers are needed on farms? What are some of the things that factory workers do? (They handle raw materials, tend the machines, and distribute the finished goods.) Do you think this work requires much training? How do you think early factory workers and people who worked with new farm equipment received their training?"

Tell the class to read pages 294 and 295. Ask: "What animals have been used for power in the past, and are still used in some places in the world?" Have pupils recall the use of oxen, horses, or donkeys to bring water out of wells by water wheels. Have them remember how mules pulled the plows to loosen the soil.

Ask: "Do you think more labor is done by people today than in 1850? by machines? Do we use much animal power today? How do you think most heavy work was done in 1850 —by humans, animals, or machines? Why is the present time often called the 'machine age'?" Discuss what the rise in the use of mechanical power means in terms of our forests, coal, and oil resources. Ask: "What might happen if we could not supply the resources to keep our machines running? What do you think can be done to conserve our natural resources? What other sources of energy might we develop? What are the good points and the bad points of nuclear energy?"



Not all early sewing machines ran on steam like this one. People had to pump with their feet to make most of them run. How do you think sewing machines made everyday life easier?

Does this man's report show that people still believed in the frontier?

The rise of machines By the mid-nineteenth century, machines were making more and more things. A machine was expensive, but it worked much faster than a man or a woman. And a machine never got tired or asked for higher wages. The United States and the machine were helping each other to grow.

Machines and money Most Americans were proud of their machines. They were able to buy things that only rich people in Europe could afford. This was because machines could make many things in one day. Since a factory owner could sell many pieces of whatever he made, he could charge less for each piece. More Americans were able to buy more things. The country grew richer.

► Why can a person charge less if he sells a lot?

The machine age was coming to the farm, too. A man named Cyrus McCormick invented a machine called a reaper. The reaper could cut crops in the field much quicker than a man could. Another machine was invented to gather together the cut crops. Still another was invented to separate the eating part of a plant from the stalk. Mowers were invented to cut hay and then rake it together.

These machines gave the farmers many extra hours of free time. But the farmers used this time to open up even more land and to raise more animals. Machines were helping the farmer feed the growing nation. But in the middle of all this growth, the Civil War broke out.

- ◆ sī' rus mik kôr' mək
- ◆ rē' pər

*The picture below shows
Cyrus McCormick's reaper.
Because of this machine, a
farmer needed fewer
helpers to harvest his crops.*



Explain that machinery also requires a labor force, but many machines can be run only by skilled labor. Have the pupils look at the picture on page 295 and compare it with the one on page 281. Have the class discuss the different kinds of work the two farms provide.

Tell the class that Cyrus McCormick invented and patented the reaper in 1831. Its mechanism has remained essentially the same to the present. Ask: "Do you think the reapers of today are pulled by horses? Do you think they are pulled by tractors? What are tractors?" Have the pupils bring into class pictures of tractors and any pictures they can find of modern farm machinery. Mention that today, improved farming machines include planting machines for most kinds of crops, manure spreaders, cultivators, spraying equipment, corn pickers and binders, haying machinery for mowing and baling, and grain threshers and combines. Ask: "Do you think that the invention of machines such as the ones just listed helps explain why so many people have left the farms to work in towns and cities?"

Tell the class to read the feature on page 296. Inform them that economically, the North was in a better position than the South during the Civil War.

Population: At the beginning of the war, the North had approximately 22 million people; the South had only 9 million. (Approximately 3½ million of these were slaves.) Ask: "Why is a large population an advantage in warfare?"

Natural Resources: According to the 1860 census, the North had 110,000 factories while the South had only 20,000. While the North was a developing industrial area, the South was still basically agricultural. Cotton was bought cheaply in the South and sold for high prices in the North. Ask: "How does having more factories, industries, and money help a country in fighting a war?"

Farming: Although there was an increased demand for agricultural products, there was less available labor. This led to increased demand for and use of mechanical agricultural aids, such as the reaper. Ask: "Why are there fewer workers available during war? Which part of the country had more factories for making farming machines?"

WAR AND INDUSTRY

The Civil War began in 1861 and ended in 1865. It changed the land greatly. Cities and fields were burned. Many farmers and workers died. But a strange thing happened during this terrible time. Industry grew bigger than ever. Can you figure out why war would help industry grow?

Both armies needed cannons and boots and blankets for more than a million soldiers. They needed guns and bullets and uniforms for their men. They needed wagons and carts to carry these things.

Factories went into business to

make these things. They also built gunboats for the navy. Steam engines had to be built to move the boats. More ironworks and coal mines opened up to supply these factories.

The armies also needed a lot of food to feed their soldiers. Farmers grew even more crops and opened up even more land. They cut down more forests and plowed up more grassland. And after all this extra work, they sold more food than ever before. In what other ways does war change a land? How did the Civil War help the country to grow?





Steel is melted down at about 3,000° F! Why do you think the men who work nearby have to wear special clothes? Steel is used to make many thousands of things we use—from paper clips to sky-scrapers.

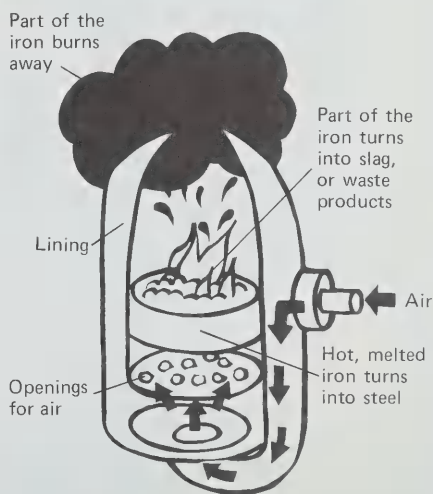
Important discoveries Right before the Civil War began, two important discoveries helped industry to grow. One was the invention of a new and easy way to make steel. The other was a way to draw oil from the ground. This was the beginning of the oil industry.

Steel Steel is made from iron and is very strong. It is used to make machines and to build ships, bridges, and buildings.

But steel used to be very expensive to make. Because of this, people used it only for things like knife blades and watch parts. These small things could only be made with steel.

A cheaper way to make steel was needed. An Englishman named Henry Bessemer worked on this problem. Bessemer knew that steel is made by removing a certain part of iron. He knew that this part would burn away in air. So he melted down iron and fanned air through it. His idea worked. The “Bessemer process” of making steel was born.

Soon Bessemer steel was made in countries all over the world. And the United States became a great steel-producing country.



◆ hen' rē bes' ə mər

◆ How did the Bessemer process help the mining industry to grow?

Instruct the pupils to read page 297. Have the class guess how long ago men used iron. Provide pictures to show different civilizations that used iron. List some of the uses of iron in these past periods, such as weapons, tools, utensils, armor, and parts of wagons and carriages. Add some modern-day uses.

Explain that early people discovered how to get a soft metal by heating certain rocks, or *ores*. Ironworkers and blacksmiths became important people. Have the class read Henry Wadsworth Longfellow's "The Village Blacksmith." Ask: "How is the blacksmith described? Why would the blacksmith have to be such a powerful man? Do most people today need to be so strong?"

Make sure the class understands that Henry Bessemer did not invent steel. People had known how to make it for a long time, but only in small amounts. Bessemer provided a more economical and faster way to produce steel. The melted iron is poured into a converter, an open-topped, egg-shaped furnace. Air is blown in at the bottom, causing flames to shoot out of the top as the impurities are burned away. About 12 minutes later, the molten steel is ready to be ladled out.

Tell the class that steel is not used in the form in which it comes from the converter. It is strengthened by adding metals such as chromium, manganese, tungsten, and nickel.

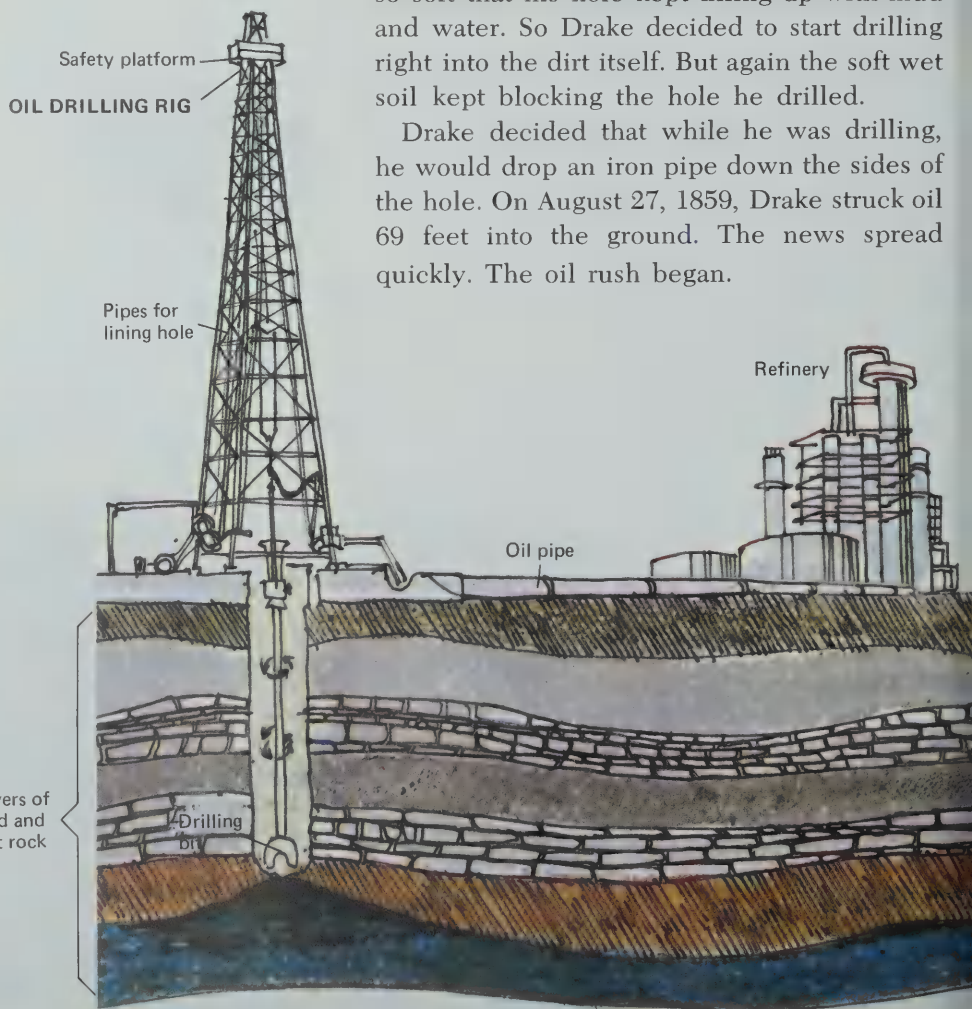
Have the class read pages 298 and 299. Inform pupils that Drake's drilling equipment, or *rig*, averaged 30 barrels of oil a day, and oil sold at \$20 a barrel. Within three years after Drake's discovery, so many wells were developed that the price of petroleum dropped to 10¢ a barrel.

Discuss some properties of oil that made it useful and necessary during the early history of America: how it can be ignited for cooking, heating, and lighting; how it lubricates and prevents friction; and how it yields many by-products.

Help the class list some of the uses of petroleum products today. They might include gasoline, diesel oil, kerosene, lubricating oils, asphalt, caulking for boats, tar, and others. By processing petroleum, additional by-products have been made; they include antifreeze, fertilizers, detergents, synthetic rubber, waxes, printing ink, explosives, drying agents for paints and varnishes, and synthetics such as plastic and made-made fibers (nylon, polyester, acrylic, and others).

Ask: "Why are there shortages of oil resources today? How does this affect our way of life?" Have the pupils consider possible substitutes and what people can do without oil and its by-products.

♦ tī' tus vil



Oil The second great discovery before the Civil War was the invention of a way to draw oil up from the ground. In Titusville, Pennsylvania, a man named Edwin Drake decided to drill into the ground for oil.

Drake began by digging a hole down until he hit rock. Then he thought he would be able to drill through the rock. But the oily land was so soft that his hole kept filling up with mud and water. So Drake decided to start drilling right into the dirt itself. But again the soft wet soil kept blocking the hole he drilled.

Drake decided that while he was drilling, he would drop an iron pipe down the sides of the hole. On August 27, 1859, Drake struck oil 69 feet into the ground. The news spread quickly. The oil rush began.

Visiting the oil fields An English newspaperman visited the Pennsylvania oil fields in 1862. Here is his description of what he saw.

From Titusville to Oil City is about twenty miles. Along this whole distance the ground is punched full of holes. On most of it the wells stand as thick as trees in a forest. Steep cliffs, from 300 to 600 feet high, rise on each side of the narrow valleys. Wells are crowded all over the swampy land. . . . Wells even climb the face of the cliffs. . . .

The air everywhere stinks with the smell of oil and gas. The mud under foot is greasy and slippery. . . . Oil even hides the water of the creek like a mask of beautiful colors.

There isn't a bright green thing in that valley. Everything is black, greasy, and oily. The rocks are black and greasy. The trees on the hillside are black with smoke. The grass and bushes . . . look as if they had been pulled through a sooty chimney. Mud is everywhere—deep and unending. . . . No wonder men wear boots. With every step they take, the mud sinks nearly to their knees.

From this description, tell how drilling for oil affected the land.

The search for oil Drake's idea of lining an oil well with pipe is used on every well drilled today. The search for oil has stretched out all over the country. In Texas, rich supplies of it had been found before 1900. California and Oklahoma also have large supplies, and the search for more still goes on.

► Find out what oil is used for today.

Activities

1. Have pupils decide whether they can go an entire day without using anything made from petroleum or its by-products.
2. Have pupils find the sentence on page 294 that reads, "Since a factory owner could sell many pieces of whatever he made, he could charge less for each piece." To illustrate this idea, divide the class into a small group and a larger group. The smaller group will be the factory owners who will make and sell a product. Give the small group a small amount of an item to be bid on. The larger group will bid for the items. (It should work out that the bidders will force the prices up as they bid because there are not enough items to give to everyone.)

A second time, have a large group of factory owners, each with the same amount of the item as before. The smaller group will bid for them. This time, pupils will find that overproduction will mean that there is less demand for their product. Prices will be low and some items will be left over. The producers will need to offer special inducements and incentives for their products.

Help the class understand how supply and demand are related: that if the demand exceeds the supply, prices go up; if the supply exceeds the demand, prices go down. Tell the class, however, that taxes and government actions affect supply and demand.

LESSON 5 (pp. 300–306)

Lesson Objectives: Understanding that the Homestead Act opened up land in the Midwest for settlers. Recognizing the effect of immigration on the growth of cities.

Lesson Skills: reading maps, contrasting, evaluating

Introduction

Ask: “What would you do if I told you there were diamonds in your backyard? Would you rush to dig up your mother’s flowers? Would you neglect your schoolwork to dig in the backyard?”

Lesson Development

Tell the class that gold was first discovered in California in 1842, but few people were aware of it. When gold was found at John Sutter’s sawmill in the Sacramento Valley in 1848, the news spread quickly. The gold rush began, and men began arriving from all parts of the world. California’s population grew from 15,000 to 100,000 by the end of 1849. By 1852, \$200 million worth of gold had been taken from rivers and mines, and California’s population had grown to 250,000. Ask: “How do you think the increase of California’s population helped the development of California? What do you think the people did who did not find gold and who did not return east? What do you think people did with their gold?”

- Find out the name of San Francisco’s football team. Why do they have that name?



THE GROWTH OF MINING

The forty-niners In 1848, gold was discovered in California. This started the famous “gold rush” of 1849. All over the country, men called forty-niners left their homes and their jobs. “California or bust,” they cried, as they pushed across the country on horseback, mule, or foot.

There were more hopeful miners, though, than there were mines. Many sad men returned east with less money than when they started.

A few did strike it rich, though. This led other men to go on searching farther into the mountains and deserts of the West.

EXPANSION OF AGRICULTURE

After the Civil War, ranchers and farmers moved into the Great Plains. Find the Great Plains on the map below. Large cattle ranches grew up on the plains.

Bonanza farms Farmers followed the ranchers to the Midwest. They began to raise wheat. It takes more land to raise wheat than it does to raise vegetables. Farms of 5,000 or more acres were common. In some parts of the Midwest, there were wheat farms of 40,000 and 50,000 acres!

Such huge farms were called bonanza farms. California miners used the Spanish word *bonanza* to mean a big find of gold.

◆ A plain (plān) is a large area of flat, or rolling, treeless land.

◆ Find out how many acres are in a city block. This will give you an idea of the size of these farms.

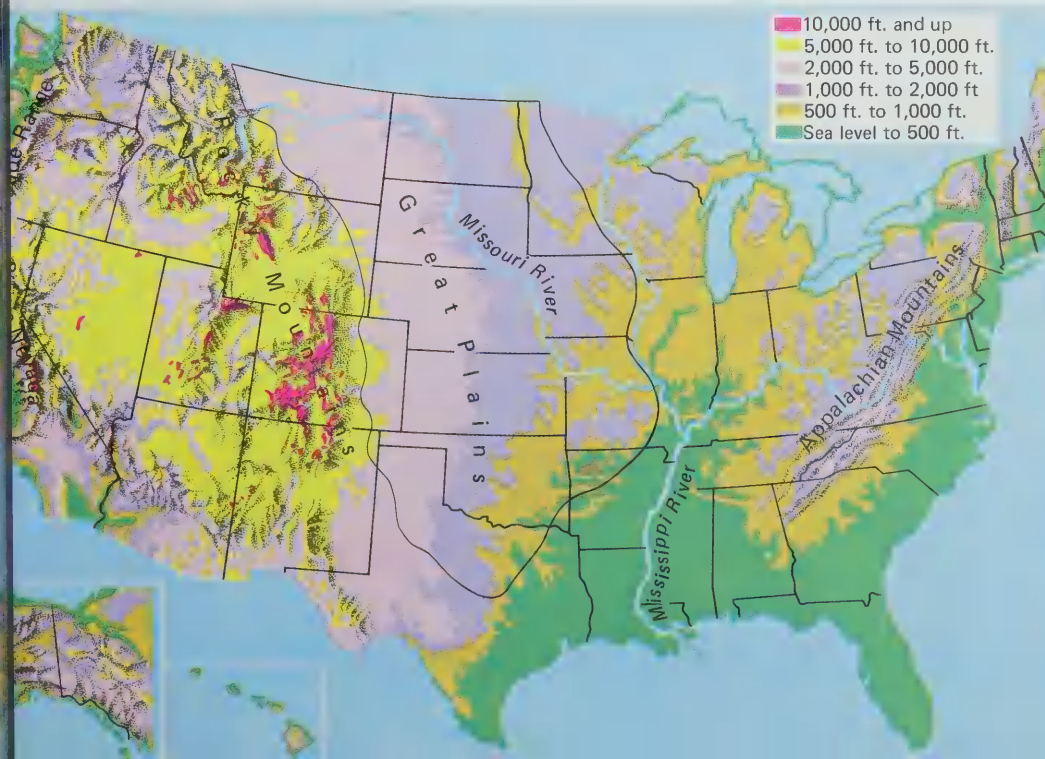
◆ bə nan' zə

Have pupils look at the map on page 301 after they have read pages 301–302. Have them use the legend to find out how high the land in the Great Plains is. Provide outline maps of the United States. Use the map on page 287 to show the states in the Great Plains region. After naming the states in this area, the pupils can shade their maps to indicate elevation. Have them use symbols to show the major crops produced:

1. a corn belt extending westward from Ohio to eastern Kansas and Nebraska;
2. a corn and winter-wheat belt westward through southern Illinois and southern Missouri into eastern Kansas and Oklahoma;
3. a winter-wheat center in Nebraska, Kansas, northwestern Oklahoma, and eastern Colorado;
4. a spring-wheat belt including much of North and South Dakota, western Minnesota, and eastern Montana.

Discuss the need for large machinery on the huge grain bonanza farms.

Tell the class to read the last paragraph on page 302. Then tell them what life was like on a farm in the period following the Civil War.



Typically, a rural farm might have a small, two-story frame house. It was surrounded by fields, and there were no neighbors within miles. Inside the house was a large living room containing a large table with an oil lamp. Here the family usually gathered in evening. The kitchen had a cast iron sink and a huge wood-burning stove. As families became more settled, they might add a parlor or dining room. Curtains, cushions and bedspreads were made by the housewife. Some farms were fortunate enough to have a sewing machine.

The work began before dawn with feeding the animals, milking cows, lighting fires, chopping wood, and bringing in water. Breakfast might include fried ham, eggs, baked rolls, and leftover pie or cake. Lunch was called "dinner" and was the heaviest meal—with potatoes, salt pork or cured meats, home-canned fruits, fresh fruits and vegetables in season, and, from the cool springhouse, milk, butter, and eggs. Ask: "Why did people eat so much during this time? Did they need the energy the food gave them in order to work hard? Do you think homes were as warm then as they are now?"

Bonanza farms got their name because many of their owners became as rich as gold mine owners. They acted like mine owners, too. Miners would work on a mine until it was empty. Then they would move on to another mine. Bonanza farmers used their land until it dried up. Then they sold it. They never worried about keeping it in good condition.

Homesteaders But the United States government wanted all land to be used. It wanted the country to grow and become as rich and powerful as the older nations of the world. So the government passed a law helping people to settle the Midwest. It was called the Homestead Act. This law gave any citizen 160 acres of free land if he promised to live on that land and farm it for five years.

The new farms were small, but there were thousands of homesteaders. In fact, there were so many that all good farmland in the Midwest was gone before 1900. Still, more settlers kept coming to look for land of their own. They plowed up all the grasslands on the plains. Soon the Midwest was covered with fields of wheat.

Life was hard. Sometimes thousands of flying grasshoppers would come and attack a farmer's wheat crop. When this happened, all the work of the year was ruined for the farmer and his family.

Farm life was lonely. People had little time to visit each other. Chores still had to be done, day in and day out. And now the farmer had no hope of finding more good land to settle.

THE RISE OF CITIES

Many young people did not want to live on farms all their lives. Many grew tired of the same day-to-day work. More and more, they began to leave the farms. Where could they go? To the cities back East. In the cities, there were more people to talk to, more excitement, and more chances to make money.

Suddenly cities grew up and spread out. But it was not only young farm people who came to the cities. There were also hundreds of thousands of **immigrants** who poured out of Europe every year. Every group who came had their own dreams about the United States.

They came because they were poor, hungry, or wanted more freedom. In the United States, they and their families hoped to find freedom and land of their own. But most of the immigrants were so poor when they landed that

♦ An immigrant (im'igrənt) is a person who comes into a country to settle there.

Immigrants had to travel on crowded ships to reach their new home in America.



After supper, schoolchildren practiced spelling or addition; women sewed. Mail-order catalogues, the Bible, and farm publications were evening reading. Ask: "Why did families look forward to barn raisings and husking bees and special holidays when children played baseball, hopscotch, and crack-the-whip?"

Have the pupils read page 303 and the first few lines of page 304. Ask: "How would you feel if you had to leave everything you had, and often everyone you loved, and come to a strange, new country? Do you think you would feel better to see a symbol of freedom, such as the Statue of Liberty, welcoming you? What is the Statue of Liberty?" Tell pupils that this statue of a woman, by the French sculptor Bartholdi, was presented by the French government to the United States on July 4, 1881. It stands on Liberty Island in New York Harbor. Ask: "Why do you think the statue was placed in New York Harbor?"

In her right hand is a burning torch, and in her left hand, a book of law. At her feet are broken chains. Ask: "What do you think the torch and book of law stand for? Why are there broken chains at her feet?"

Have the pupils read pages 304–306, which are taken from a story by Jack London and describe how he worked in a factory when he was young. After they have read the section, ask them to describe how they would feel if they had to spend every day working in a factory, as Jack London did in 1888.

Find out if any pupils have read *The Son of the Wolf* or *The Call of the Wild*, two of the stories written by Jack London. Tell them that the author lived in a period when money was scarce. He held a variety of jobs: newsboy, factory worker, sailing with the fish patrol, mowing lawns, working in a laundry, and sealing in Alaska.

Ask: “How would a variety of experiences, even though difficult to endure, be valuable to a writer? Do you think being in Alaska gives someone a better idea of the country than reading about it? Does the story you have just read tell you why Jack London fought against many kinds of injustice? Did he think of his life as an interesting story? Did he know what it was like to suffer?”

Explain that in the early days of industrial development, many children worked in factories and even in mines. Employers liked to hire children because they could be paid low wages. It was not unusual to find children under ten years of age working in factories. People became horrified at the effects of the work on children, and even on adults. Work was often done under very poor conditions.

◆ Jack London was a famous American writer who was born in California.

◆ Do you think Johnny and his mother liked their jobs? Do you think they wanted to go to work? Explain.

they had to stay in the city where their ship docked. They took whatever work they could find to feed themselves and their families. Most were hired for factory jobs that no one else wanted. These jobs paid very little money.

Factory work Factory owners not only hired immigrants. They hired poor children whose parents sent them to find work. These children would work long hours for as little money as the immigrants.

Here is how one writer described the lives of a 12-year-old boy and his mother, who worked in a mill in Oakland, California. The author, Jack London, worked in a factory very much like this one when he was a boy.

A faraway whistle, long and loud, brought both of them to their feet. She glanced at the tin alarm clock. Its hands stood at half past five. The rest of the factory world was also just waking from sleep.

“We’ve got to run,” she said. . . .

They carefully felt their way out of the room and down the stairs. It was clear and cold, and Johnny shivered. The stars still shone brightly in the sky. The city lay in darkness. Both Johnny and his mother dragged their feet as they walked. They could not make themselves lift their feet high enough to clear the ground. . . .

Near the factory, they became part of a huge crowd that pushed forward through the dark. As Johnny entered the factory gate, the whistle blew again. He looked back toward the east. Across the housetops a pale light was beginning to creep. This was all he saw of the day. He

quickly turned his back on the light and joined his work gang. . . .

He worked like part of the machine. When he ran out of thread, he stretched out his left hand to stop the large spinning wheel. With the same hand, he caught a flying end of string from the wheel. At the same time, his right hand caught up the loose end of another string [and he tied the knot]. There was nothing hard about making knots. He once boasted that he could tie them in his sleep. And, in fact, he sometimes did. One night he dreamed that he had tied knot after knot for hundreds of years.

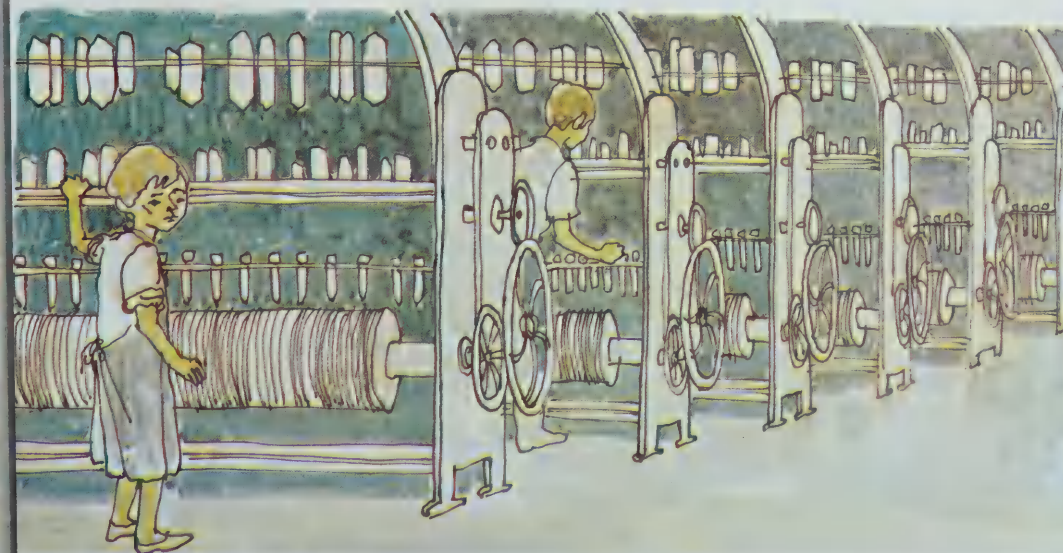
Some of the boys played and wasted time at their machines. But the boss was around to stop this. He caught Johnny's neighbor at play once, and boxed his ears. . . .

Johnny had gone into the mills at the age of seven. When he was eight, he got work in another mill. His new job was easy. All he had to do was to

Changes in laws gradually restricted children from jobs that were considered dangerous. These laws limited the hours of work. They also required that children have a certain amount of schooling. Ask: "Should everyone have a high school education? How old do children have to be before they can go to work?"

Child labor laws require that employers keep a certificate on file for government inspectors showing a child's age and birthplace. Minimum wage laws prohibit the sale of products made by children under 14 across state lines. However, children employed in agriculture or by their parents are excluded from these controls.

Have the class discuss the problems of migrant farm workers. Instead of going to school, young children often help their families in order to earn money for food. Ask: "What kind of school could be set up for children in farm labor camps? How could controls be set up to assure that they go to school instead of working? Is an education necessary for them? Why?"



Activities

1. Have pupils research the colorful period of the gold rush and role-play mining life in the West. Have them set up a scene to show the uncomfortable life in tents and camps and the hardships of "gold fever."

2. Find out if any pupils have visited the Statue of Liberty. Have the class write a story about how it felt to be an immigrant and see this symbol of liberty for the first time.

Answers (p. 306)

1. The reaper was invented by Cyrus McCormick to cut crops more quickly than could be done by hand.

2. American industry grew during the Civil War because of need for weapons, clothing, and agricultural products. These goods were needed quickly and provided the stimulus for mechanization of industry and farming.

3. Henry Bessemer developed a faster and more economical way to process steel. Edwin Drake struck oil in Titusville, Pennsylvania, by sinking pipe casing to protect the drill from the mud and dirt that otherwise caved in on it.

4. Bonanza farms were very large farms. These farms specialized in grain production rather than the diversified production of smaller farms.

5. Homesteaders were citizens who received 160 acres of free land if they promised to live on the land and farm it for five years. These farmers settled in the Great Plains regions.

6. Immigrants came to the United States because many of them were poor and hungry or wanted more freedom.

► Does this sound like a good way to earn a living? Would you like to do work like this? Why or why not?

sit down with a little stick in his hand and guide a stream of cloth that flowed past him. But he sat all day in one place, far away from any window.

He dreamed wonderful dreams as he watched the machine. But there was . . . no need to use his mind. He dreamed less and less, while his mind grew dull and sleepy. Still, he earned two dollars a week, and that meant the difference between starving and just being hungry.

When he was nine, he lost his job. Measles was the cause of it. After he got better, he got work in a glass factory. The pay was better. . . .

It was simple work—tying glass stoppers into small bottles. He tied a bundle of strings around his waist. He held the bottles between his knees so that he could work with both hands. Sitting bent over his knees for ten hours a day, his shoulders grew humped, and his chest was pushed in. This was not good for his lungs. . . . He became nervous. At night his muscles jerked in his sleep. In the daytime he could not relax and rest. He remained very nervous and his muscles still jerked. He became pale, and his cough grew worse. Then he got sick, and he lost his job in the glassworks. . . . Now he had to go back to the first mill where he had worked so many years before. Johnny was 12 years old.

1. What machine invented in the 1800s helped make the work of farmers easier?
2. How did the Civil War help American industry to grow?
3. Who were Henry Bessemer and Edwin Drake?

4. What is a bonanza farm? How is it different from other big farms?
5. Who were the homesteaders? What part of the United States did they help settle?
6. Why do people leave their own country to settle in another one?

Lesson Objectives: Understanding that farming has changed through mechanization. Learning about environmental pollution.

Lesson Skills: recalling, comparing and contrasting, analyzing information, reading charts, "reading" pictures

The Biggest Change

Introduction

Have pupils think about the advantages of using machines instead of people in offices and factories. Ask: "Who does automation benefit? Have all the workers who have been replaced by machines been able to find new jobs? Do machines make mistakes?"



Lesson Development

Instruct the pupils to read page 308 and the first part of page 309. Ask: "With the increased emphasis on automated work, will workers find it necessary to have more education and gain more skill and training for their jobs? How does automation lead to new jobs? require new skills?"

Tell the class that many people think that as work becomes more automated, the work week will decrease. New systems of vacations, work hours, and rearrangement of work weeks will be utilized. Ask: "Do people today have long vacations? Do they have long workdays? Why do some people take advantage of the short workday to hold two jobs?"

Have pupils think of the service workers that their area has. Among them will be policemen, firemen, hospital attendants, library workers, government office workers, and utility workers (such as telephone, gas, water, and power workers).

Provide the pupils with slips of paper. Have them list all the services they have used or plan to use in one week. Have them include service workers their families will come in contact with. Consider doctors, dentists, teachers, postal workers, and others.

► What do we mean when we say a computer "reads" instructions?

◆ Service means help.

As the United States kept growing, it kept changing, too. This change was seen in many ways: There were more people, new kinds of work, new places to live, and new ways to live. The land was changing, too. You will see how as you read on.

CHANGING INDUSTRIES

One big change was in the factories themselves. At the beginning of this century, most factories ran by steam power. In factories today, the machines are driven by electricity. Each machine has its own electric motor.

Many machines today are automated. This means that a machine can do everything by itself. In the past, workers had to stand next to the machine and work with it. For example, on a metal-cutting machine, the worker had to pull the machine blade over the piece of metal.

With automation, the machine can do all the cutting by itself. A card with holes punched in it tells the machine what to do. A computer attached to the machine "reads" the holes and moves the machine. The machine tells a worker when it needs to be oiled or when its tools are getting dull. That is all the human help it needs.

Service industries New kinds of industries grew up. Some were service industries. These industries do not make cars or dishwashers or clothing. They do not help build highways or dams or office buildings. They do not mine coal or iron. Instead, they do things



for people. Barbers and restaurant cooks work in service industries. So do janitors and cleaning women. So do bankers, salesmen, policemen, firemen, and government workers. By 1970, there were more than twice as many service workers as factory workers.

TWENTIETH-CENTURY FARMING

New machines also caused a growth in farming. Perhaps the most important farming machine to be invented was the tractor.

In the 1880s, bonanza farmers were already using steam-powered tractors. The big steam tractors worked well enough on the flat lands of the bonanza farms. But they were too heavy to use on farms with rough or hilly land. They were also too expensive for most farmers.

Firemen must decide the best way to put out a fire quickly. The method they use depends on what is burning, the weather, and any special problems.

Compile all the lists into one class list to see how many people are needed to help us have a high standard of living. Help the pupils find out what a standard of living is. Ask: "What items, equipment, and kinds of services do you need to make life bearable? Do you need a house with hot running water and a kitchen and bathroom? Do you need schools, highways, and air conditioners and heaters? Will people throughout the world answer these questions the same way? Do they all have these 'necessities'?"

Have the class categorize services into groups such as personal services, those services related to safety, and so on. Ask: "How can we support and pay for service workers?"

Have the pupils read about twentieth-century farming, on pages 309–311. Ask pupils how farming in the United States began. (on small farms, with simple tools and with the help of a few animals) Ask: “What was the single most important invention that made industrialization possible?” Tell the class that a second major invention made it possible to make a gasoline, or internal combustion, engine. Ask: “Why did the use of gasoline and oil make drastic changes in farm machinery and the motor-vehicle industry?” Have the class look at the pictures of farm machinery that they brought into class before.

Ask: “What other problems came about after the development of the internal combustion engine?” Tell the pupils to look at the picture at the bottom of page 310. Say: “See if you can find seven things that pollute our environment. What can be done to correct some of these problems?”

► What connection can you see between farmers and men who own oil wells? between farmers and factories that make tractors?

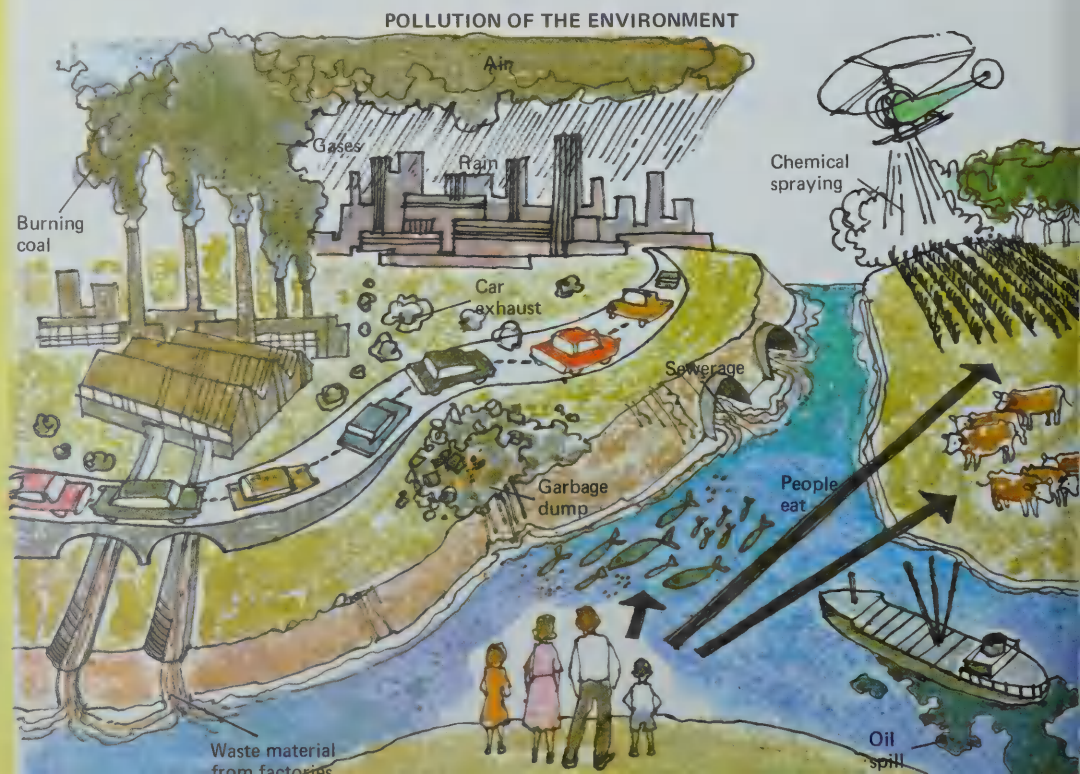
◆ A fertilizer (fərt' əl ī zər) is any material that is put into soil to make plants and crops grow better.

Tractors for all In the 1890s, however, several people invented gasoline tractors. A gasoline tractor was much more powerful than a steam tractor. Yet it was small enough and light enough to pull farm machines over even the roughest farmland. It was also cheap.

As more and more young people left the farms, farmers bought more tractors to do the extra work. Today, American farmers cannot get along without tractors. Tractors have taken the place of workers.

Fertilizers and man Fertilization was another big change in agriculture. Farmers began to use more fertilizers than ever before.

Fertilizers made the soil better so more crops could grow. But fertilizers also caused



problems. Fertilizers contain materials that plants need. Rain sometimes washes these materials into streams and lakes. There, tiny water plants eat them. The plants grow so quickly that they spread all over the water and crowd out the fish. When the fish die, they rot and poison the water. In this way, many lakes and ponds have been turned into smelly swamps.

Insect killers Farmers always had trouble with insects and weeds. Insects ate the crops up. Weeds choked the crops so that they could not grow. In some years, an entire crop might be lost to insects. That meant hard times for the farmers. Some had to sell their farms to pay their debts.

Science came to the rescue. After World War II, new insect killers and weed killers were invented. They worked well. Farmers who used them had bigger crops at harvest time. Soon almost every farmer was using them. One of the new insect killers was called DDT.

Farmers spread these chemicals from their tractors at the same time they planted their seeds. Crops grew better. But after a few years, strange things began to happen.

There used to be some helpful insects that ate the harmful insects. But the insect killers had killed the helpful insects along with the harmful ones. And then, the chemicals made by man stopped working on the harmful insects. With all the old insect enemies gone, the many harmful insects were once again spreading quickly and eating up the crops.

◆ Have you ever looked into a pond or lake? What kinds of living things were in it?

◆ World War II began in 1939 and ended in 1945.

◆ What happened when the "killers" made by man mixed with the ways of nature?

See if pupils can figure out how an insecticide sprayed on plant leaves can affect animals that are not plant eaters. Ask: "Can you think of any animal that is not dependent upon green plants? Do animals drink water? What do toads eat? What happens to dead leaves? What generalization could you make regarding plants and animals?" Read to find out how plants and insects are dependent upon each other. Ask: "What happened when insect killers killed the helpful insects?"

Explain how balance is important in nature. Have the class review the picture on page 310. Ask: "In what three ways might chemical spraying have an effect on man? How would chemical spraying affect cattle? fish?"

Instruct the pupils to read page 312. Tell the class the state bird of Utah is the California gull. Ask: "Do you know why it was adopted as Utah's symbol?" Inform pupils that in 1848, when the harvest was ready to be gathered, farmers in Utah noticed swarms of locusts landing on their crops. Locusts can cover a field like a blanket, eating every leaf and stalk of the plants until nothing remains. Utah farmers tried burning the locusts, but more swarms came. When it seemed inevitable that the crops would be destroyed, thousands of California gulls miraculously appeared. They ate the locusts and saved the crops. Ask: "Can you see why grateful people honored this bird?"

♦ Antarctica (ant ärk' ti kə) is a continent that surrounds the South Pole.

♦ Why are farmers afraid of a decision like this? How would it affect their farms?

♦ What would happen if a flood or cold weather ruined the crop one year? Is it sometimes safer to grow more than one crop? Why?

Birds Scientists found another thing wrong with DDT. After it killed insects, it was still dangerous. It stayed poisonous for years. Rain and snow washed DDT into the soil. Birds that ate worms also ate a tiny bit of DDT. Poison built up in their bodies. Many birds were killed. Others laid eggs that would not hatch. Many kinds of birds have come close to disappearing because of DDT.

Fish DDT also washed into lakes and streams. In the sea, it has poisoned shrimps and crabs. Sometimes, wind carries soil with DDT in it over long distances. DDT has spread so far that it has been found in the bodies of penguins living in Antarctica. Antarctica is thousands of miles from the farmlands where DDT was first sprayed.

Man A little DDT gets into almost everything we eat. So far, doctors have not found any person who has been killed by DDT. But they are on the lookout. A number of governments have now forbidden the use of DDT. But no one knows how much longer the DDT already in the soil and water will last. And now the farmers are afraid that the government might forbid other man-made killers to be used.

Specialization in farming Farmers used to grow many crops and raise many kinds of animals. Today, most farmers specialize in growing one or two products. Some grow corn; some grow wheat; some raise dairy cows, pigs, goats, or chickens.



Factories in the field Farming used to be a whole way of life. Now it is like a factory in the field. The modern farmer must be a good businessman to be successful. He must keep records so that he knows how well or how badly he is doing. He must also know animal and plant science. And he must be a good mechanic, so that he can keep his machines running. Read the following table.

YEAR	NUMBER OF FARMS	AVERAGE SIZE OF FARMS (acres)
1900	5,737,000	146
1940	6,350,000	167
1970	2,924,000	383

Were there more or fewer farms in 1970 than in 1900? Have farms been getting larger or smaller? What do you think are some of the reasons for this change?

In 1820, each farmer could feed four people. Today, he can feed 46 people. Do you think big machines have helped?

◆ A mechanic is a person who can put together and fix machines.

◆ Do you think farmers could get along without the fertilizers and killers and machines that science has made? Explain your answer.

Have the class reread the paragraph on the effects of the DDT on fish. Ask: "Why did the penguins show DDT in their bodies? What will farmers do, since DDT causes so much harm?" Tell the pupils that years ago, farmers in California had their own way of dealing with insects. They used ducks and geese to eat the insects that attacked their plants. The geese also made good "watch dogs." Ask: "Do you know what geese do when they see strangers?"

Ask: "What are some of the special problems farmers have besides insects?" Elicit answers such as drought, flood, lack of workers for a labor force, expensive machinery, crop failure, and worn-out and eroded soil.

Ask the children to read page 313 and the first part of 314.

Activity

Write to the nearest state agricultural college for a catalogue of course offerings. Look at it with the class and discuss with them the different kinds of agricultural courses that are offered and why.

LESSON 7 (pp. 314-321)

Lesson Objectives: Discovering that the development of the automobile and of air transportation established new industries. Recognizing that the automobile and airplane have led to traffic congestion and noise and air pollution.

Lesson Skills: categorizing, comparing, defining

Introduction

Have the class imagine what people's reactions might have been to the first horseless carriages. Provide pictures of the earliest cars—box-like seats suspended between large wheels like bicycle wheels. Tell pupils about the noisy, rapid explosions that were frightening to people and animals. Show pictures of the driving costumes of men and women.

Much farmland is now owned by large companies and worked by hired labor. Makers of canned and frozen foods are among the corporations that own huge farms in different parts of the country. Once the dream of almost every American was to own a farm of his own. Do you think most Americans still have that dream?

CHANGES IN TRANSPORTATION— AUTOMOBILE AND AIRPLANE

In the 1800s, steamboats and railroads made great changes in America's way of living. In the twentieth century, the automobile and the airplane have brought even greater changes.

At first, automobiles were unpopular with farmers. Reckless drivers ran over dogs and chickens. Cars frightened horses pulling wagons or buggies. This caused a great many accidents.

When a car broke down, people would laugh at the driver. "Get a horse," they would cry. Farmers would sometimes sprinkle the road with tacks to put holes in the car tires. They were afraid of the automobile.

Yet it was the farmer who first made good use of cars in the United States. The automobile helped end the loneliness of the farmer. He could now drive to visit his neighbors and even make trips into a nearby town.

The "Tin Lizzie" Henry Ford was the man who made a cheap but good car that ordinary

people could trust and afford. Ford was the first man to mass-produce cars. Each of Ford's workmen did one simple job, like turning a screw, as the partly finished car was moved past him. The next worker did a different task, and so on until the car was finished.

Ford's most famous car was the "Tin Lizzie." He hired men to write jokes about the car. These jokes were told all over America. One such joke went: "What time is it when one Ford follows another across a bridge?" Answer: "Tin after tin." In a short while, everybody wanted a car.

People with cars, though, wanted good roads to drive on. In the early 1900s, there were very few good roads outside of the cities. In wet weather, a driver would almost always get stuck in deep mud. In dry weather, the roads were filled with big holes. This made riding in cars very uncomfortable. Would many people buy cars if driving was so difficult?

Highways States began to build paved roads between important cities. The roads helped the farmers send their crops to customers in the cities. People could now live in the country and drive to work in the city.

► These paved roads were called "all-weather roads." Can you guess why?

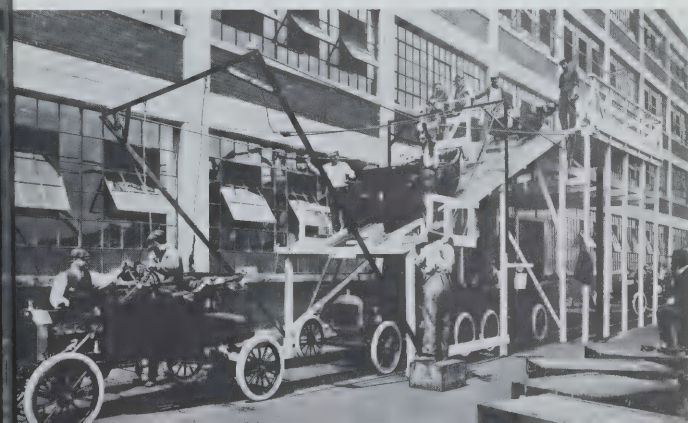
Lesson Development

Have the pupils read pages 314 to 317. Instruct the pupils to look at the early automobiles and figure out why people laughed at them and the people in them. Ask: "Would you have bought a car if you had lived at that time?"

Tell the class that Henry Ford made use of Eli Whitney's principle of interchangeable parts and set up an efficient assembly line. A long track carried the unfinished automobile to the workers. Each man did one job and sent the car on to the next.

Ask: "How would assembly-line methods make the automobile less expensive? Are most automobiles today built by this method? Are there any that are custom-made?" Pupils may remember seeing on television or in the movies the special cars with bulletproof glass, telephones, and other equipment that Presidents and other officials need. Ask: "What other kinds of cars, or motor vehicles, do we have today?" (jeeps, limousines, ambulances, buses, garbage trucks, etc.)

Henry Ford's Model-T car was America's most popular car for 20 years. Why do you think it cost less to make than other cars of the time?



Tell the class that Henry Ford was known for his shrewdness. According to one tale, he required that parts be shipped in wooden boxes of the exact size he specified. People discovered that the box sides were then used for the floorboards of his Model-T.

Ask: "How would a fuel shortage affect the automobile industry? How would it affect everybody's life? What could happen to suburbs, shopping centers, and motels?"

Write on the board the names of two of the largest cities in the United States: Los Angeles and New York City. Have the class find out the sizes of these cities, how they are planned, and what services they provide. Then help the class discover problems these two cities will face if fuel supplies are limited for a long time. They will probably find that New York has a well-developed mass transportation system—subways, buses, and commuter trains. Also, its services are concentrated into a fairly small area.



Many suburbs do not have lots of open space. Often houses are close together.

◆ The word *suburb* means "near a city" in Latin.

► In the past, people moved from farms to cities. Where are people moving to today?

As more roads were built, more people went to live in the country. Little country towns grew into large towns and even into cities. Places where people settled just outside of cities were called suburbs.

As time went on, the suburbs nearest to the cities filled up. New suburbs were built farther away from the cities. Builders tore away hills and trees and buried rivers and lakes. Row after row of houses were built where there had once been woods or farmland. Shopping centers were built for the people of the suburbs. Few people needed to go into town at all. And less and less open country was left.

The American habit of traveling by automobile has created new businesses. Travelers used to stay at hotels near railroad stations. Now they stay at motels at the edge of the highway. Thousands of roadside eating places and hamburger and ice-cream stands have

been built to feed travelers. Drive-in movies were invented so that people could see movies right from their cars.

A booming business Automobile manufacturing has become one of America's largest industries. It is also the biggest single customer of the steel industry.

Automobile makers use millions of dollars' worth of rubber for tires. They need glass for windows and windshields, copper for electrical wiring, and paint for the bodies of their cars.

The automobile made it easier for people to get around. It gave many jobs to many workers. But it brought bad things along with the good. The American highway system has covered the land with concrete. On holidays and weekends, the highways are so crowded that traffic sometimes stands still for miles. In cities, and on the roads leading to them, there are huge traffic jams during rush hours. It is not unusual for a traffic jam to make people late for work.



► Even banks have drive-in windows now. Do you think Americans depend too much on their cars?

► What would happen to other American industries if car manufacturing was slowed down?

► Can highway-covered land be used for anything else?

The United States has more cars and highways than any other country in the world. Some highways are superhighways. They can have more than four lanes, and cars can travel on them at speeds of 60 to 80 miles an hour. Where several highways meet, overpasses and underpasses have been built to keep the traffic apart.

On the other hand, Los Angeles is a spread-out city with no main business area and no adequate mass transit system. Ask: "How will these cities meet their needs and face their problems in an energy crisis?"

Help the pupils to prepare a chart showing changes in road construction over the past years. List on the board some of the materials used for making streets and highways. List such materials as cobblestone, asphalt, dirt, crushed stone, cement, gravel, and oiled earth. Have the class discuss the merits of some of these materials.

Ask your pupils: "Why do you think there are so many different kinds of highways and highway patterns?"

Tell the pupils to read from page 318 through the first half of page 321. Ask: "Have you ever watched a bird flying overhead? Do birds seem to fly without any effort? Can you imagine people wanting to fly too? Can you also imagine other people saying, 'If we were meant to fly, we'd have wings?'"

◆ Polluted means "made dirty."

◆ A glider is an airplane that flies without a motor.

The Wright brothers flipped a coin to see who would be the first pilot of their plane. Orville won. The plane weighed 750 pounds—including Orville. The wings of the plane were 40½ feet long.

The smoke from many automobiles fills the air with poisonous gases and causes smog. Tests have shown that most of our smog comes from auto fumes. Scientists believe that many diseases are made worse by breathing air that is polluted.

The airplane Can a machine fly? Most Americans said no. But two brothers, Orville and Wilbur Wright, from Dayton, Ohio, did not believe it. After many experiments, they put an engine in a glider. They made their first powered flight in 1903, at Kitty Hawk, North Carolina. The plane stayed in the air less than a minute and flew about one-sixth of a mile. Still, they had proved that a machine heavier than air could fly.

There is a story that a traveler watched the Wright brothers flying over a pasture near Dayton. He asked a bystander what was going on.

"Aw, it's just those crazy Wright brothers fooling around with their flying machine," the man replied. "Nothing will ever come of it, that's for sure."





The first airplanes were light and dangerous. They could not fly very far. The pilot lay on his stomach out in the open. There was no room for passengers.

But the Wrights and many other inventors soon made airplanes into useful machines. Only 11 years after the Wrights' first short flight, airplanes were being used by both sides in World War I.

Faster airplanes The nations at war needed airplanes that were fast and could make long flights. At the beginning of the war, top speed for an airplane was 70 to 80 miles an hour—not more than the speed limits on most of our highways today. By the end of the war, fighter planes were flying at 140 to 150 miles an hour.

After the war, people realized that planes used in wartime could be used to carry mail and passengers in peacetime. In Europe, air

Can you describe how air travel has changed since the Wright brothers flew the Kitty Hawk?

■ Add 11 to the year the Wrights first flew. When did World War I begin?

Inform the class that people throughout the centuries have tried to fly. Some men attached large wings to their arms and fluttered them up and down as birds would. Others flew in hot-air balloons. Gliders, shoved off a cliff or some other high point, came closest in principle to the airplane. It was not until the 1890s that someone succeeded in lifting a glider off the ground. It was left to Wilbur and Orville Wright to make the first powered flight at Kitty Hawk, North Carolina, in 1903. Military use during World War I made the aircraft industry important. From that point on, there was steady and rapid development in engine designs and types of airplanes. Ask: "How many different kinds of airplanes can you name?" List the different kinds of aircraft in use today: gliders, helicopters, sea planes, blimps, propeller-driven airplanes, jet airplanes, and rockets. Have pupils describe them.

Compare, with the class, the comfort and services offered by a present-day transcontinental airplane with those found in earlier ones.

Have the class do the experiment on page 336, as you use a balloon to explain how compressed air in the balloon forces the balloon forward like a jet.

Give the class this problem: "If a jet plane can travel 1,000 miles an hour, how long would it take to travel the 240,000 miles to the moon by jet?" Warn pupils that this question is tricky and they should think carefully before answering. Let the class discuss their answers. The right answer is never. Someone may be alert enough to realize that a jet engine uses air to provide the push that propels it forward. Since the layer of air around the earth is only a few hundred miles thick, jets would be unable to operate. Most jet airliners fly up to eight miles above the earth.

◆ Radar instruments send out radio waves that bounce off things. Experts can tell pilots what the radar has found.

■ Plans are being discussed for jumbo jets that will carry 1,000 to 2,000 passengers. What do you think will happen when they all get off the plane at the same time?

service for passengers began in the early 1920s. It did not really get started until the 1930s in the United States.

World War II brought changes in airplane design. Airplanes became larger, more powerful, and faster than ever. Radar was used to guide airplanes in bad weather. Flight lanes, like highways in the sky, were mapped out across the United States. Special radios were set up that told pilots where they were and when they could land.

Jet airplanes Today, jet-powered airliners fly from New York to California in a few hours. This trip used to take three days and nights on the fastest trains.

Problems of the airplane People who wanted to travel long distances used airplanes more and more. This meant that more planes were needed. More airports were built for all the new planes and passengers.

Today, crowding has become a problem of airports as well as of highways. Sometimes people sit in planes just waiting for their plane to take off. Sometimes they are forced to circle over an airport, waiting for their turn to land.

Getting to and from the airport has become a problem, too. In most cities, passengers have to reach the airport in buses or private cars. The streets and highways are often crowded. Sometimes it takes longer to drive to the airport than to fly to another city.

"Jumbo jets" can carry almost 500 passengers. However, not all airports have runways



Guglielmo Marconi worked out many of his first ideas for radio in England. Later, he worked aboard his famous yacht Elettra, where this picture was taken. Marconi had turned the ship into a floating laboratory.

long enough for such large airplanes. And it is hard to find space to build new airports. Most of the land near a city is already filled up with people, houses, and stores.

People do not like to have airports built near the places where they live or work. The constant loud noise makes people nervous. It can damage hearing. Big planes taking off and landing sometimes cause buildings to shake and can even crack the glass in windows. And the engines cause a lot of air pollution.

RADIO AND TELEVISION

Radio and television were two very important inventions. They often help decide how we think and act. Yet when most of your parents were born, there was no such thing as television.

The first radio The first useful radio was invented in 1896 by an Italian named Guglielmo Marconi. At first, his radio could only send out sound a few yards from where he spoke. But by the end of the next year, he was sending

◆ gü lyel' mō mär kō' nē

Activities

1. Perform an experiment for the class to demonstrate the principle of the piston-type internal combustion engine.

Place two match tips in a glass medicine bottle. Wet the cork stopper and put it on the bottle, but not too tightly. Place the bottle on its side in the sunlight and hold a magnifying glass over it so that the sun's rays are focused on the match tips. When the matches get hot enough, they will catch fire, and the burst of flame will pop off the stopper of the bottle.

Explain that gasoline engines use spark plugs to set fire to the fuel.

2. Have the class draw a mural entitled "Transportation." They should include only those means of transportation that have been mentioned in this unit.

LESSON 8 (pp. 321-323)

Lesson Objectives: Understanding that the mass communications media have been responsible for changing ways of living. Recognizing the influence of advertising through radio and television.

Lesson Skills: analyzing, comparing and contrasting, evaluating

Introduction

Tell pupils: "Radio and television are communications media. That means they are methods of communication. Do you ever listen to the radio? What do you listen to on the radio? Why do you watch television?" Have the class list some of the other ways people communicate. Possible answers are: telephone, telegraph, drums, radio, television, telegram, phonograph, tape recorders, cameras and photographs, and newspapers.

Lesson Development

Have the class read the section on radio and television on pages 321-323. Tell the pupils to ask their relatives what they listened to on the radio before they owned a television set. Prepare for class by finding out from a library or microfilm collection what programs were offered on the radio in the 1930s, when radio became a nationally important means of communication. Discuss these programs in class. Ask: "Have some of these old radio programs been made into television shows? Do you think people's tastes have changed since the 1930s? How many radios and television sets does your family own? How much time does your family spend watching television? Does anyone in the family watch Presidential appearances and other important television shows? Do the members of your family discuss what they have seen and heard? Do you discuss these things with your friends?"

► What kinds of things do you listen to on the radio?

► Do you think an advertiser helps decide what kind of program a station plays? Explain your answer.

messages for 10 miles. In a few years, he was able to send the first radio message across the Atlantic Ocean. Soon, ships began using radios to signal each other at sea.

Plays, music, and speeches Later inventions made it possible to speak and play music over the radio. The first regular broadcasts in the United States began in 1920.

Radio broadcasts brought news to the loneliest ranches and farms. Thousands of people listened to the same comedy program or drama at the same time. This gave people all over the country something in common. Politicians and other people with an idea to spread spoke over the radio. Advertisers used radio to reach thousands of possible customers. They paid the stations to advertise. The stations used the money to make programs.

Radio quickly became one of the chief ways for Americans to enjoy themselves. It was also one of their chief ways of keeping up with what was going on in the world. It stayed this important until television came into use in the early 1950s.

The earliest television Television was invented in the 1920s by a group of scientists. But many problems had to be worked out before it could be used to put on daily programs. Just when these problems were answered, World War II broke out. Further work on television stopped until the war was over.

When television did appear, it was a great hit. People gathered in the street outside the

window of a store that had a television set turned on. Families that owned a television set found themselves very popular with their neighbors. It was not long, though, before most people owned their own television sets.

Sound and sight The television set influenced people even more than radio did. The people who watched could see, as well as hear, the person who was speaking. This made it seem much more real than radio. A funny saying by a popular television comedian was repeated all over the country. Newscasters somehow seemed more convincing on television. A political candidate with money to buy time on television had a great advantage over one who could not afford to buy time.

Television can show sports and news events as they happen. And cameras circling the earth now make it possible to show programs from all around the world. In this sense, television has brought people closer together.

▷ Do you think it is as important to see a politician as to hear what he says? Explain your answer.

▷ Do you think this is true today? Why?

Children at J. F. Kennedy International Airport in New York City watch television on individual sets.

Activities

1. Have the class find out if they are influenced by advertising. Ask: "What are your favorite television commercials? How many commercials can you sing from memory? Do you ask your mother to buy products you have seen advertised?" Let the pupils analyze some of the following slogans: (1) "cleaner than clean;" (2) "sound as a drum;" (3) "whiter than white;" and (4) "like a white tornado."

2. Tell the class to keep track of all the television programs they watch for one week. Have them decide what types of programs they watch: entertainment, musical, adventure, etc. Have them consult the television listings to see if they could set up a balance of interesting programs.

3. Have the class produce a one-act play for a radio program. Have them include sound effects. Next, have them adapt the play for television. Have pupils discuss the difference between preparing something for radio and for television.

4. Obtain a sample of the Morse code and write it on the chalkboard. Have pupils try to tap out messages using the Morse code and decipher them.

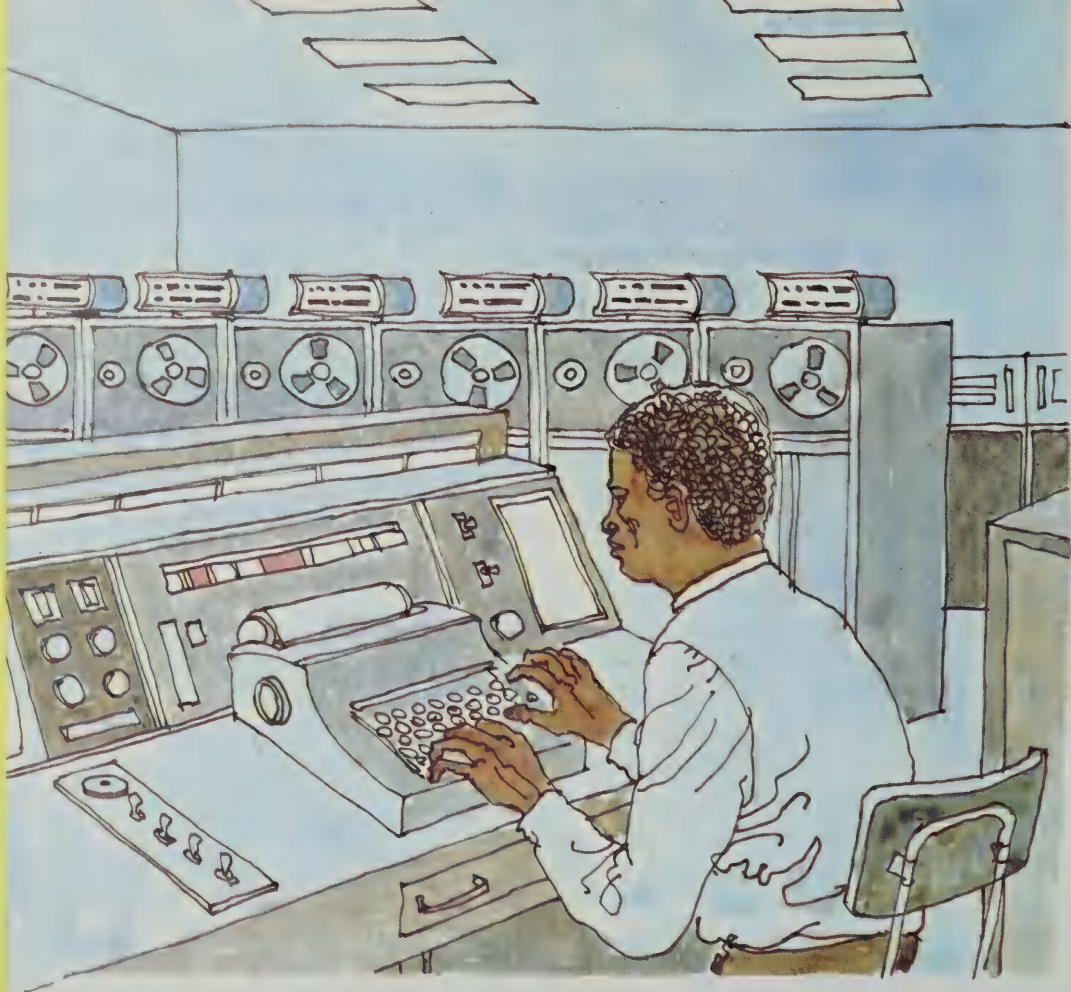


Lesson Objectives: Learning that computers are efficient means of storing information. Knowing that computers help solve problems.

Lesson Skills: defining, surveying, gathering information

Introduction

Have the pupils make their own "data bank." Tell the pupils that someone wants all the information he can obtain about your classroom and the pupils in it. Help the class figure out what information to include, how to write it up on file cards, and how to organize the cards. Give ■ code number to each group of cards.



THE COMPUTER

◆ A computer is an electronic machine that solves problems. It can "remember" a large amount of facts.

Computers were invented during the 1940s to solve very hard mathematical problems. Since then, business and government have used them in hundreds of different ways every day. The computer has become a part of our lives. And it has changed our lives almost without our knowing it. Here are some of the ways in which computers serve us.

Using computers A policeman sees a car being driven dangerously. He stops the driver and questions him. The driver acts in a very strange way. The policeman radios the description and the license number of the car to the police station. A computer flashes this information to other computers all over the country. In a few minutes, the answer comes back: The car was stolen three days ago in a state hundreds of miles away. Without the computer, it might have taken the police a week or more to get this information.

Pretend you are the head of a large department store. You sell many different things, from candy bars to washing machines. You want to make sure that you have plenty of the things that customers buy most often. If you run out of these things, the customers will buy them from another store.

In the past, you have asked your workers to keep track of what is sold and to turn in reports to you. But this has taken a great deal of time. Now a computer does the job. Each time an item is sold—a pair of ice skates, a sweater, a set of dishes, a toy auto-racing set—your worker tears off part of the sales tag and puts it in an envelope. The tag is punched with holes in computer code. The holes tell the computer what has been sold. Once a month, the computer prints out a special list with all necessary information on it. It tells you whether people have been buying more or less of anything than usual. It also tells you when you are running low on any item and need to order more.

Lesson Development

Instruct the pupils to read pages 324–326. Have the class give a definition of a computer (a machine that calculates—figures out by mathematical means). List the different ideas. After finding the real definition, see which class members came closest.

Ask: “Are the cards you made easy to handle? Would it be easy to lose one? Would you need lots of room to store all the cards containing all the information people wanted?” Tell the class that computers solve these problems by storing information easily, in very little space. Explain that there are several ways to provide *input* for computers: holes punched in paper tapes or cards is one way; another way of putting information into a machine is by using magnetic tape that records the information. Ask: “What do you think *output* is?”

Have the class think of some computers and business machines they have seen: cash registers, adding machines, calculating machines. Ask: "How are these machines used?"

Have pupils ask their parents or friends whether they have ever been "victims" of an error made by a computer. Discuss the pupils' findings to see if it can be determined whether the error was caused by the machine or by the people who put the information into the machine.

Have pupils discuss whether or not it is desirable to have agencies gathering and storing information about everybody. Some of the uses of this information might be in the public interest. However, there is concern today that this information about people's private lives might be used by unscrupulous people for undesirable purposes.

Activity

Tell the pupils to imagine that information about everybody has been gathered into a national computer bank. Have the class write a few paragraphs explaining the difficulties they had when the computer "lost" the information on them. For instance, suppose someone wanted to get a passport, and the computer had no record of his birth.

► Do you think a national computer bank is a good idea? Why or why not?

Computers also do many other jobs. They guide airplanes through heavy fog. They help submarines travel hundreds of feet beneath the surface of the ocean. They send bills from stores. They control automated machine tools in factories. In less than a second, a computer can solve a complicated problem that would take a human being several months to do.

Are computers perfect? But computers make mistakes, too. They are only as good as the information that is fed into them. If that information is wrong, the computer cannot give a correct answer.

A space launching that cost millions of dollars failed because someone forgot one letter in his instructions to the computer. Many people have paid a bill from a store and still been billed again and again because, by some mistake, the computer has not been told that the bill has been paid.

A computer bank One idea that has frightened many people is that of a national computer bank. This bank would hold information about everyone in the country. It would know such things as how much money you earn, how many times you have changed jobs, how your health is, and how quickly you pay your bills. It would have your school grades all the way from first grade up. It would have the record of any time you have ever broken a law, even for such a small matter as a parking ticket. But it would be impossible to keep every bit of mistaken information out of the data bank. Why?



HIGHER STANDARDS OF LIVING – FEWER NATURAL RESOURCES

On the average, Americans today are richer and more comfortable than many kings of long ago. We have automobiles and airplanes to carry us where we want to go. We have color television and tape decks to entertain us. Thanks to modern transportation, we can have fresh food at all times. Most houses are warm in the winter, and have air conditioners for the hot summer. Almost everyone can afford nice-looking clothes for all of the seasons.

The price we pay But we pay a price for our way of life. We have been using up our natural resources at a very fast rate. Some of these resources cannot be replaced, like coal and iron. There is no way to make new coal or iron once the supplies in the ground are used up. Other resources, such as wood, are renewable. Trees can be planted to replace those that have been cut down. But it takes many years for them to grow large enough for use. And there is not too much space left for planting trees. Yet, as our population grows, we dig deeper into our natural resources each year.

LESSON 10 (pp. 327–335)

Lesson Objectives: Becoming aware of the problems of over-utilizing natural resources. Understanding why we have pollution problems today. Recognizing that natural resources are limited.

Lesson Skills: synthesizing, categorizing, interpreting pictures, recalling, analyzing, defining, evaluating

Introduction

Tell the pupils to collect pictures showing America during the colonial days and the early twentieth century. Have them categorize the pictures to show clothing, ways of living, and ways of working. Now give the class the following information explaining what percentage of American households owned the following equipment in 1959. About 98 percent of households with electricity had refrigerators, 96 percent had radios, 90 percent had television, 93 percent had washing machines, and 89 percent had electric irons.

Ask: "Why are Americans using up their natural resources so quickly? Why do you think pollution and ugliness often are found along with industrial development and the growth of cities?"





The Hudson River has long been known for its beautiful scenery. Today, much of that beauty has gone. The painting above shows Newburgh long ago. The photographs show the Hudson today—from West Point south to Manhattan.

Lesson Development

Have the class look at the pictures on pages 328–329. Let them imagine what the earliest settlers would say if they were able to see Manhattan today. Ask: “Would the first settlers of the Hudson River Valley be saddened by what they would see today?”

Ask: “What kinds of buildings would you be likely to find at the waterfront? Why would it be important to build warehouses near the loading docks of the waterfront?”

Ask: “Why has the resort business become very important and profitable today? If you were going on a vacation, would you want to stay in a new hotel being built at a resort? As cities become more crowded, do more people seek to escape to the country? Why would having more people living in the suburbs and countryside change the area’s landscape?”

Read or relate to the class the story of Rip Van Winkle from *The Sketch Book* by Washington Irving. Then ask: "Would Rip Van Winkle be even more surprised today by the changes in his village?"

Tell the class: "Pretend you are on a huge airship cruising around the sky. On your ship you have everything you are ever going to have. You have all the water, oil, coal, iron, and other metals and minerals you will ever have. When you have used up all of these resources, there will be no place to get more of them. Are there some ways you can extend the life of your resources? Will you use them in the best way possible? Will you recycle everything you can?"

◆ A barrel is equal to 42 gallons.

◆ A geologist (jē āl'ə jist) is a scientist who studies the earth and its rocks and minerals.

Students helped clean up after an oil tanker collided under the Golden Gate Bridge in San Francisco.

Using up oil In one year alone (1969), the United States produced over 3 billion barrels of crude oil. This was enough to cover the entire state of Rhode Island ankle-deep. Still, the United States had to buy millions of gallons of crude oil from other countries. Where do we put all this oil? Into gasoline tanks, into fuel for jet planes, and into heating oil for homes and businesses. But sooner or later, we are going to run out of oil.

Digging up coal Geologists believe that we have enough coal left in the United States to last for centuries, even if we continue using the amounts we do now. The problem is getting the coal out of the ground. First, the soil and rock on top of the coal have to be removed. This dirt is piled in huge rows beside the deep pits in which the coal lies. In some states, coal miners have even dug away mountains to get at the coal beneath them.



But the dirt is not replaced when the coal has been dug up. The men who own and manage the mines say replacing it would cost too much. So black coal dust from the pits spreads all around. Ugly piles of dirt lie next to the pits. The land cannot be replanted.

Mining in this way is more than ugly. It can be dangerous. Sometimes the dirt is piled in high, steep mounds, like man-made hills. During a heavy rainstorm, the dirt turns to mud and comes sliding down. It has sometimes buried houses and highways. Acids wash out of the mines and run down hillsides into streams. The acid in the water kills fish.

The biggest use of coal today is in producing electric power. Today, America depends heavily on electricity. If there is a power failure, lights go out and air conditioners stop working. Elevators stop running, and people may be trapped between floors of a building for hours. Families cannot cook meals on their electric stoves, and food spoils in electric refrigerators.

Using up iron At the beginning of the twentieth century, huge steam shovels scooped rich iron ore out of the ground in Minnesota and Michigan. It seemed as if the supply of ore would never wear out. But two world wars and industry in between the wars used up huge amounts of iron ore for making steel. Not long after World War II, the best ore was used up. Steelmakers had to use ores that had not been thought worth using before. Much of the iron ore now used in the United States comes from such faraway places as Venezuela.

Do you think water that kills fish is good for people to drink?

Why would much steel need to be made in wartime?

ven əz wā'lə

Inform the pupils that our world is like that airship. There is no place we can go to find additional resources. We can find substitutes. But water and air have no substitutes. If they become polluted, there may be no way to renew the waters and air. Have the class look back at the picture on page 310. Ask: "How does air become polluted? How does our water become polluted? How would the oil spill in the drawing affect animal life?"

Some cities have taken steps to maintain clean air for their people. In areas where the automobile is the main mode of transportation and where certain atmospheric conditions exist, there are days of smog alerts. Ask: "What steps have been taken to reduce air pollution in industrial cities? What have car manufacturers put on cars to help reduce air pollution?"

Ask: "How has coal mining helped cause pollution? Is coal mining dangerous? Is it harmful to the miners?" Tell the class about the dangers of coal mining and how it has harmed the health of the miners.

Ask: "How many different kinds of metals and minerals can you think of? Do you think most of these resources are mined? Have you heard of anybody becoming sick from metal poisoning?" Mention contaminated fish.

Ask: "Where does your drinking water come from?" Expect such answers as from oceans, lakes, rivers, drinking fountains, rain, and wells. Ask: "What happens to our water after we use it? Does it go back into wells? How does water get into reservoirs?" Inform the class that rain falls on the ground and in rivers, lakes, and oceans; the ground soaks up much of the water as it hits the soil. Much of the water that sinks into the ground is available to us from water wells. Then, through evaporation, once again the water is returned to the clouds and the cycle is repeated. Water from rivers is collected in reservoirs and treated with chemicals to make sure the water is free of germs. Ask: "What happens if the water from the river is very polluted? Does that mean that lots of chemicals have to be put into the water? Could these be harmful also?"



The average person in America uses about 70 gallons of water a day! Scientists and city officials test water to see if it is clean and germ-free. Ask your teacher about simple ways you can test water in your area.

Pumping up water We are also using up our supply of water faster than nature is replacing it. In some cities, so much water has been pumped out of the ground that the ground has actually sunk several feet. This causes the walls of buildings to crack. It damages pipelines under the streets.

In many farm regions, much water is used for the crops. The water level in some of these areas has sunk as much as 400 feet. Wells have gone dry. In some areas near the seacoast, salt water has begun to creep into the wells.



We cannot live without water. We know we are slowly running out of it. Yet we waste a great deal of it all the time. We take longer showers than we often have to. We do not have our leaky faucets fixed very quickly. Many of our rivers and lakes are so badly polluted that we cannot swim in them without getting sick.

Getting rid of waste Just getting rid of our wastes has become a serious problem. Take the case of detergents. When detergents were invented in the 1930s, they were thought to be a great new help to the housewife. They were much better than soap in certain ways. They could clean dishes and clothes even in hard water. They did not leave a ring around the bathtub. They had more cleaning power than soap, and they were easier to use. But they had some unexpected side effects.

In order to get people to buy their products, manufacturers made detergents that gave lots of suds. However, unlike soap suds, detergent suds did not quickly disappear after use. They stayed active and sudsy for months. In some communities, waste water with detergents in it found its way into wells. People were not at all happy when they turned on a faucet and found a stream of suds coming out. Rivers and streams soon filled up with detergent suds. The problem became bad. Manufacturers were forced to make new detergents that broke down soon after use. Now the suds problem is a thing of the past. But the new detergents depend on phosphates for their cleaning power, and this causes pollution. New solutions are needed.

◆ Can you think of any other ways in which we waste water?

◆ Hard water has minerals that keep soaps from making suds.

◆ Do you know where sudsy water goes to after it goes down the drain? Why might this be harmful to water?

◆ Phosphates (fäs' fäts) are chemicals that pollute water.

Make sure the class knows what a detergent is. (It is a cleaning agent that works like soap but is not soap.) Ask: "Do detergents still contain phosphates today?"

Have the class look at the picture on page 310 again. Point out that there are two flows of material into the river: industrial waste and sewage. Inform the class that scientists have found that both industrial waste and sewage that are untreated or improperly treated before dumping into lakes, rivers, and oceans cause much greater harm than phosphates in detergents.

Ask: "What would you say is one important step we must take to help keep our waters pure?"

Have the class read page 335. Write the word *recycle* on the chalkboard. Ask the class to discuss what it means. From the pictures on page 334, have them guess why the glass is being separated by colors.

Let the pupils think of the many uses that could be made of recycled glass. Ask: "Could the glass be melted and used for making glass containers? What other things can people do with garbage? Have you seen Christmas and birthday cards made out of recycled paper?" Tell the pupils that "cut-and-fill" projects, such as those begun in Burbank, California, provide a way to utilize waste for landfill. Earth is spread over the waste, and new lands are created.



Many cities are faced with the problem of getting rid of their garbage. In the past, most garbage was burned, put in a dump, or dumped at sea. But this polluted the air, land, and water. And so, people began to recycle garbage—make it into new products.



Where to put garbage? Every day, we throw away thousands of tons of steel and aluminum. These metals could be melted down and used again. We throw out tons of no-return glass bottles. They could also be used again. In one typical day, the city of New York threw away enough garbage to make a mound 55 feet high, 300 feet long, and 200 feet wide. City experts estimated that the materials in that one day's garbage were worth \$120,000.

Today, it is becoming hard to find places to put garbage. Some communities now have to send their garbage 40 miles away by truck.

Americans have used their natural resources wastefully. For most of our history, it seemed that they would never run out. Now they are starting to run out.

Today, we let garbage and other wastes run into our waters. We tell ourselves that it will do no real harm. Or we say that it is the price we have to pay for progress. Now it is becoming plain that we have been wrong. We must change our attitudes if America is to be beautiful again.

- 
1. What is a service industry? Name five services people do for you.
 2. What is an automated machine?
 3. What damage do insects and weeds do to crops? How have farmers tried to stop this damage? In what ways are some of the farmers' chemicals harmful to the environment?
 4. What was the "Tin Lizzie?" Name three changes the automobile has brought to the American way of life.
 5. Who were the Wright brothers? What did they invent?
 6. What is pollution? Why are people using up the natural resources of the earth so quickly?

■ Do you ever think of what happens to the garbage you throw out every day? What can you do so that there will be less to throw away?

■ Think back to the time of the early American settlers. How has the United States changed since then?

Activities

1. Tell the pupils to list what they use in a day. In a second column, have them list the major resource or resources used in making each product.
2. Provide magazines for the pupils to cut pictures from. Have them make a collage showing how beautiful our country would look without pollution.

Answers (p. 335)

1. Service industries are those that provide services rather than products. People who perform services include beauticians, barbers, waiters, and policemen.
2. An automated machine is one that can perform a function under the direction of a computer instead of a human.
3. Insects destroy crops by eating them, and weeds choke crops so they cannot grow. Farmers have used insect and weed killers to prevent this from happening. But some of the chemicals kill helpful insects as well as birds, fish, and other animals.
4. The "Tin Lizzie" was a Model-T Ford, an automobile. The automobile made people more mobile, created new businesses, and resulted in the laying of miles of highways.
5. Wilbur and Orville Wright made and flew the first powered heavier-than-air craft in 1903 at Kitty Hawk, North Carolina.
- Pollution is the dirtying of air and water by dumping wastes, spills, sprays, and burning gases. Resources are used up as we develop a higher standard of living.

INVESTIGATING THE UNIT

Gathering Information

The time when more and more machines began to do people's work is called the Industrial Revolution. Find out about it at the library. As you read about the Industrial Revolution, ask yourself where it began and how it affected early American industry.

Grouping Information

What do you think were the good results of the Industrial Revolution? List them on a sheet of paper. List what you think were the harmful results of the Industrial Revolution in another column.

What Does the Map Tell You?

Draw a map of the United States. Now look in an atlas and find maps of America's natural resources. Locate the coal, iron, and petroleum centers of America. Put them on the map you have drawn by coloring each resource a different color. Where are the coal, iron, and petroleum centers of the United States?

Using What You Have Learned

Machines run on different kinds of power. Jets, for example, move by jet propulsion. You can see how this works by blowing up a balloon. Hold the balloon so that no air escapes. Now let it go. In what direction does the balloon move? The air that is released from the back of the balloon pushes the balloon forward.

In jet propulsion, a stream of gases moving quickly out the back of the plane gives the plane a push. Where do you think these gases come from? Can you think of some of the problems the inventors of jet propulsion had to solve?

Comparing and Contrasting

Imagine your parents are giving a dinner party. Make a menu for the party. Describe how your parents get and prepare their food.

Do the same thing for the pioneers. Compare the way they got and prepared their food with the way your parents prepare for a dinner. Why are the two ways so different?

SOCIAL STUDIES DICTIONARY

KEY TO PRONUNCIATION

The pronunciation of a word is shown in this way: **abbreviate** (ə brē'vē āt). The letters and signs used are pronounced as in the words below. The mark ' is placed after a syllable with primary or heavy accent, as in the example above. The mark ˘ after a syllable shows a secondary or lighter accent, as in **abbreviation** (ə brē'vē ā'shən).

a hat, cap	j jam, enjoy	u cup, butter
ā age, face	k kind, seek	û full, put
ā care, air	l land, coal	ü rule, move
ä father, far	m me, am	û use, music
	n no, in	
b bad, rob	ng long, bring	
ch child, much		v very, save
d did, red	o hot, rock	w will, woman
	ō open, go	y young, yet
e let, best	ô order, all	z zero, breeze
ē equal, be	oi oil, voice	zh measure, seizure
ēr term, learn	ou house, out	
f fat, if	p paper, cup	ə represents:
g go, bag	r run, try	a in about
h he, how	s say, yes	e in taken
	sh she, rush	i in April
i it, pin	t tell, it	o in lemon
ī ice, five	th thin, both	u in circus
	TH then, smooth	

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agricultural revolution—The time when people first learned to farm and live in villages.

altitude (al' tə tüd)—Height above sea level.

anthropologist (an' thrə pol' ə jist)—A scientist who studies people and the way they live.

archaeologist (är' kē äl' ə jist)—A scientist who studies the kinds of lasting things people leave behind.

assembly line—A moving belt that carries machine parts to the workers in a factory. The parts pass from one worker to another until the machine is put together.

band—A group of people, animals, or things.

canal (kə nal')—A man-made waterway built across the land.

civilization (siv' l ə zā' shən)—The name given to the ways of living of a group of people.

clan (klan)—A group of people who believe that they are descended from a common ancestor.

climate (klī' mit)—The kind of weather an area has over a long period of time.

commune (käm' yün)—A farming community where people own land and work it together. They also share tools and other things on their land.

culture—The way of life of a people.

date—To find out how old something is.

dynasty (dī' nə stē)—A series of rulers who all belong to the same family.

empire—A group of countries that are ruled by one government.

evolution—The slow development of something.

fertile (fər' tl)—Able to grow good crops.

fiord (fyôrd)—An inlet of the sea that lies between the slopes of a hill or mountain.

frontier (frən tir')—An unexplored place.

geographer (jē äg' rə fər)—A scientist who studies the land and the way people use it.

geologist (jē äl' ə jist)—A scientist who studies the earth and its rocks and minerals.

hypotheses (hī poth' ə sēz)—Guesses based upon information.

immigrant—A person who comes into a country to settle there.

independent (in di pen' dənt)—Free from another nation's rule.

interchangeable parts—The parts of a machine that are exactly the same size. These parts fit in the same place inside the gun, car, or whatever is being made.

irrigate (ir' ə gāt)—To bring water to the land.

isolated (ī' sə lāt ed)—Separate or apart from others.

land bridge—A strip of land that connects two larger land areas.

loess (les')—A fertile, dusty, yellow-brown soil.

mass production—The process of making large amounts of products in a relatively short time.

natural resources (nach' ə rəl rē sôrs' iz)—Things in nature that man can use. Trees, rivers, coal, and gold are some natural resources.

nomads (nô' madz)—Groups of people who do not live in one place. They move from place to place in search of food.

oasis (ô ā' sis)—A place in the desert where green plants grow.

peninsula (pən in' sə lə)—Land that is surrounded by water on three sides.

permafrost (per' mə frôst)—A thick layer of frozen ice that never melts.

plain (plān)—A large area of flat, or rolling, land.

plantations (plan tā' shənz)—Large farms on which crops are grown for money.

prairie (prār' ē)—A large area of rolling grassland.

rain forest—A rainy land with many trees and vines.

refine—To take the dirt, rock, and sand out of raw metals.

saga (säg'ə)—A tale of adventure.

sociologist (sō sē āl' ə jist)—A scientist who studies people and how they live and work together.

status (stā' təs)—The position or rank of a person in society or a group.

Stone Age—A time when all of people's tools were made of stones, bones, and sticks.

surplus (ser' pləs)—An extra supply of something.

technology (tek nol' ə jē)—All of man's tool-using and tool-making ability. Tools + knowledge = technology.

tribe (trib)—A group of people with a common territory, customs, and language.

tributaries (trib' yə ter ēz)—The smaller rivers that flow into a larger river.

values (val' yuz)—Things or beliefs that people think are important or desirable.

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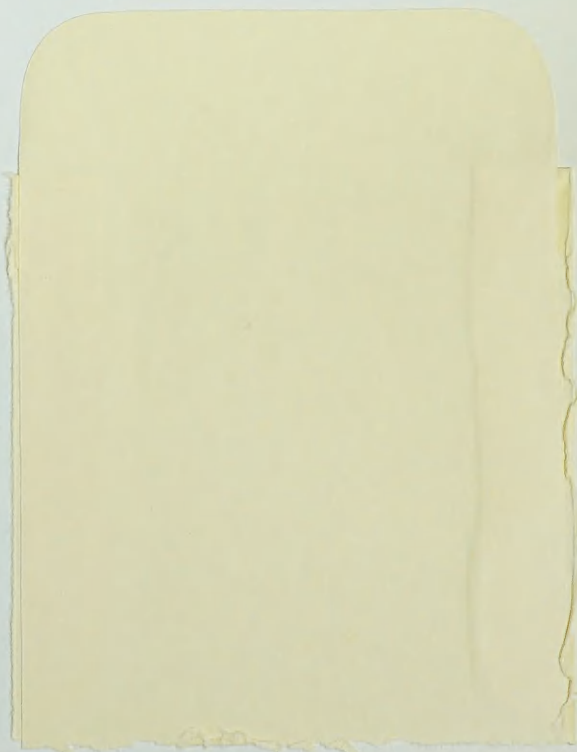
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